Data Communications

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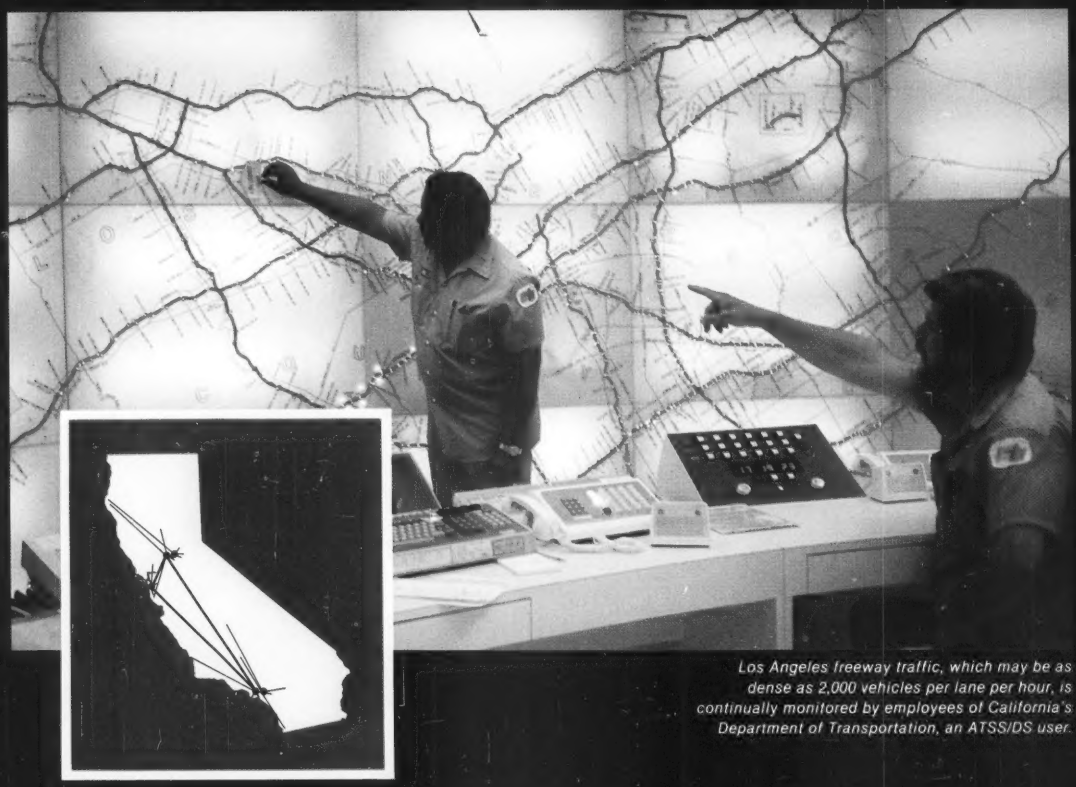
1982 BUYERS' GUIDE

The Source for Products and Services in the Data Communications Industry

Pacific's ATSS/DS Network . . .



Los Angeles freeway traffic, which may be as dense as 2,000 vehicles per lane per hour, is continually monitored by employees of California's Department of Transportation, an ATSS/DS user.

. . . is also a Tran Network.

When a California state official near the Mexican border wants to check license plate files in Sacramento, his local terminal immediately connects him with computers in the state's capital. When an engineer in Los Angeles needs data from Sacramento, her inquiry is switched to computers in that city. When a researcher at an educational institution in San Francisco uses a program residing in a Los Angeles computer, on-line access is only a few keystrokes away.

Pacific Telephone's digital network makes it all possible. Called ATSS/DS, it is the first statewide switched digital network to be offered by a common carrier, the first packet switching network to be tariffed by a Bell System operating company, and the first to provide mixed packet and nonpacket services simultaneously.

Stretching from the Oregon border to San Diego, from San Bernardino in the east to San Luis Obispo in the west, ATSS/DS ties the entire state together through switching centers in San Francisco, Los Angeles and Sacramento. It provides permanent and switched circuits between more than 400 terminals, 35 network access concentrators, and 250 ports on seven computers (including DEC, IBM, Control Data and others).

Users access the network for inquiry/response, data collection, remote job entry, time-sharing and even point-to-point message switching — all without concern for how the network will accommodate them.

In spite of its widespread topology, Pacific's network is an integrated facility with centralized management, billing, diagnostics and status reporting. And in spite of its already large size it continues to grow to meet customer demands. Nor will the state long remain the only one with such a network — California simply has a head start on the 1980s.

Tran has installed several such networks for telephone companies, and many more for educational and financial institutions, government agencies, and private industry in the United States and other nations. Simultaneously performing X.25-compatible packet, circuit, and Pacuit, switching, Tran's networks are unmatched by any others in the world.

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Corporate Headquarters: 2500 Walnut Avenue, Marina del Rey, Calif. (213) 822-3202 • Tran Communications Ltd.: Ontario, Canada • Tran Telecommunications Ltd.: Keyes House, 112-118 Cricklade Road, Swindon, Wiltshire, England SN2 6AG (44) 793-45476 • Digital Network Engineering S.p.A.: Corso Porta Vigentina, 33, 20122 Milan, Italy (39) 2 546-1551 • Tran Systems (Pty) Ltd.: 5 Andrea Road, 2091 Reuven, Johannesburg, Rep. of South Africa (27) 011 683-6846

Data Communications

BUYERS' GUIDE 1982

The one place to look for information on products and services used in data communications, distributed data processing, and computer networks.

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Contents

How to use the Data Communications Buyers' Guide 3

Advertisers Index 4

Products and Services Directory 7

Product Index 8

Communications Carriers 12

Data Concentration Equipment 20

Data Transmission Equipment 46

Diagnostic and Test Equipment 68

Distributed Data Processing 86

Storage Devices and Media 98

Terminals 108

Software 130

Support Equipment 140

Support Services 162

Data Communications Update Service 201

Vendor Directory 301

Editor in chief George R. Davis

Senior Editors Raymond Sarch
Colin B. Ungaro

Art Director William Left
News Editor Colin B. Ungaro

New Products and Services J. Peter Schmader
Distributed Data Processing Raymond Sarch
Software Wendy Rauch-Hindin
Copy Editor Linda L. Bachmann
Editorial Secretary Diana De Arce

Western Regional Editor Jim Forbes
1000 Elwell Court, Palo Alto, (415) 968-2712

News Bureaus
Bonn Roon Lewald
London Peter Heywood
Los Angeles Steve Hawkins
New York Colin B. Ungaro
Paris Kenneth Dreyfack
San Francisco John Eckhouse
Washington Edith Holmes

Founding Editor Harry R. Karp

Publisher: George F. Werner

Advertising Sales Manager
Thomas E. Duffy
Production/Business Manager
Stephen R. Weiss
Production Assistant Maury D'Gongora
Special Projects Manager Cheryl J. Weiner
Assistant Special Projects Manager
Lois M. Bruu
Marketing Communications Manager
Karen E. Positan
Reader Service Manager
Connie J. Brightwell
Circulation Manager
Peter Hutchinson
Market Development Manager
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How to use the Data Communications Buyers' Guide

The Buyers' Guide is organized into three basic sections, each planned to serve your specific needs:

1. Products and Services Directory p. 7

Products associated with data communications are divided into 9 general sections. For each section, there is a dissertation on the state of the art of the technology followed by the names of companies that supply each of the products in that section. Boldface listings are keyed to advertisements which offer additional information on products and services. (See product index on page 8)

2. Update Service p. 201

Special self-addressed, postage paid cards are available in this section so the reader, all year long, may request additional information regarding a product from any of the participating companies. Readers may also request to be put on a mailing list for future development of any product from the participating companies.

3. Vendor Directory p. 301

This directory contains an alphabetical listing of known suppliers for equipment and services in the data communications market. Information on each company includes company name, address, telephone number; name of person to contact; products manufactured or services offered; sales offices plus page references to advertisements which offer additional information on products and services.

Advertisers Index

ADC/*Division Of Magnetic Controls Company*	157
ARK Electronic Products, Inc.	60
Associated Computer Consultants	97
Astrocom Corporation	5
Atlantic Research Corporation	79
Bo-Sherrel Co.	66
Codex Corporation	83,95
Com Design, Inc.	32-33
Compre Comm, Inc.	40
Computer Devices, Inc.	128
Comtech Data Corporation	62
Cylix Communications Network	19
Data Communications Institute	18,160
Data General Corporation	138-139
Data Set Cable Co.	154
Digital Communications Associates, Inc.	34
Digital Communications Corp., *Division of M/A-COM, Inc.*	42
Dynatech Data Systems	78
Elgar Corporation	161
Epicom, Inc.	85
ESP Digital Systems Corporation	82
Ex-Cell-O Corp., *Remex Div.*	107
Gandalf Data, Inc.	6
General DataComm Industries, Inc.	39,41
General Electric Co., *Apparatus Service Division*	167
Giltronix, Inc.	155
Halcyon, Inc.	35,81
Harbor Electronics	153
Infotron Systems Corp.	44
Innovative Electronics, Inc.	158
Intertel, Inc.	80
Lanier Business Products	126-127
Local Data	156
3M—*Interactive Systems Division*	65
Micom Systems, Inc.	Cover 3,37,59
Modemsplus, Inc.	36
Motorola, Inc., *Government Electronics Division*	67
Nixdorf Computer Corporation	96
Northern Telecom Systems Corp., *Spectron Division*	76-77
Penril Corporation	64
Prentice Electronics	61
Racal-Milgo, Inc.	43
Racal-Vadic	63
Racal-Telesystems	152
Sorbus, Inc.	168
T-bar	159
Technical Analysis Corporation	38
Teletype Corporation	129
Timeplex, Inc.	45
Tran Telecommunications Corp., an Amdahl Company	Cover 2
Universal Data Systems	Cover 4

Advertising Sales Staff

Advertising Sales Manager: Thomas E. Duffy [215] 496-3818, [212] 997-3149
Atlanta, Ga. 30309: Peter B. Stien, 100 Colony Square, 1175 Peachtree St., N.E. [404] 892-2868
Boston, Mass. 02116: David B. Richardson, 607 Boylston St. [617] 262-1160
Chicago, Ill. 60611: Jack Anderson 645 North Michigan Ave. [312] 751-3739
Cleveland, Ohio 44113: Jack Anderson 1750 Illuminating Building, 55 Public Square [312] 751-3739
Dallas, Tex. 75201: John Uphues, 2001 Bryan Tower, Suite 1070 [214] 742-1747
Denver, Colo. 80203: John F. Ryan, 655 Broadway, Suite 325 [303] 825-6731
Fort Lauderdale, Fla. 33306: Peter B. Stien, Suite 400, 3000 N.E. 30th Place. [305] 563-9111
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Los Angeles, Calif. 90010: J. Stanley Elkjer, [415] 362-4600
New York, N.Y. 10020: Gary J. Beach, 1221 Avenue of the Americas [212] 997-6730
Philadelphia, Pa. 19102: Gary J. Beach, 3 Parkway [212] 997-6730
Pittsburgh, Pa. 15222: Gary J. Beach, 6 Gateway Center [212] 997-6730
San Francisco, Calif. 94111: J. Stanley Elkjer, 425 Battery Street [415] 362-4600
Paris, France 75116: Michael Sales, 17 rue Georges Bizet. Telephone: 720- 33-42
London, England W1X3RA: Simon Smith 34 Dover St. Telephone: 01-493-1451
Milan, Italy 20123: Elio Gonzaga Via Flavio Baracchini 1. Telephone: 869-06-56
Frankfurt/Main, Germany D6000: Fritz Krusebecker, Liebigstrasse 27C. Telephone: 72-01-81
Tokyo, Japan 100: Hiro Morita, 2-5-3 Chome Kasumigaseki, Chiyoda-Ku. Telephone: (03) 581-9811

Business Department

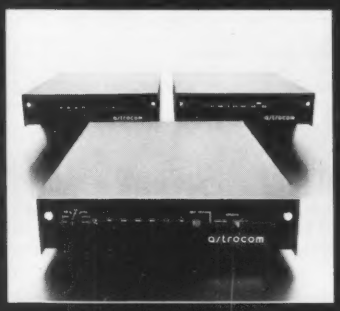
Stephen R. Weiss, Production/Business Manager [212] 997-2039
Maury D'Gongora, Production Assistant [212] 997-2059
Karen E. Positan, Marketing Communications Manager [212] 997-2695
Peter Hutchinson, Circulation Manager [212] 997-4852
Connie J. Brightwell, Reader Service Manager [212] 997-2810
William P. Howard, Market Development Manager [609] 448-1700
Classified Advertising [212] 997-2556

OVERKILL?

Beware wasteful modems. Modem overkill can waste big money. Yours. It happens, for example, every time someone specifies a $6000 modem for an application that could be served every bit as efficiently by a $700 Astrocom short haul. Wherever shorter distances are involved, you can save thousands of dollars at each location by not overbuying (or overleasing) modem capacity. And still have all the modem power you need, with optimal test features designed in. Just remember Astrocom's SH96 (asynchronous) and MOS/2 (synchronous) Limited Distance Modems. And the Astrocom Modem Emulator, which takes the place of two modems in applications 200 feet or shorter. Our band of knowing, happy repeat customers have saved their companies *millions* with these products since we pioneered their development. Designing out expensive overkill is inherent in our approach to designing solutions.

For more information, write Astrocom Corporation, 120 Plato Boulevard, St. Paul, MN 55107. Or call toll-free *1-800-528-6050, Ext. 1104.* (In Minnesota, call *612-227-8651* collect.)

astrocom corporation
Delivering solutions in data communications.



GLITCH HUNTERS

The diligent duo. Minichek is Astrocom's original, unique pocket-size BERT data test set. Maxichek is a more sophisticated, hand-held microprocessor-based data analyzer. Each is, within its range of problem-solving capability, the simplest, least expensive glitch hunter on the market. Minichek provides the field engineer with a handy tool for quick diagnosis and isolation of data communication problems. Maxichek is a more comprehensive error tracer for installing and servicing terminals, multiplexers and modems; it has all the capability of test kits far more expensive and bulky. Both testers are battery powered, eliminating power-supply problems. And like all Astrocom products, both are human-engineered for easy use with minimal training. The basic Minichek is $335 (rechargeable battery kit, $49.50 extra). The most fully equipped Maxichek is $995.

For more information, write or call: Astrocom Corporation, 120 West Plato Boulevard, St. Paul, MN 55107. (612) 227-8651. Or call toll-free 1-800-528-6050, ext. 1104.

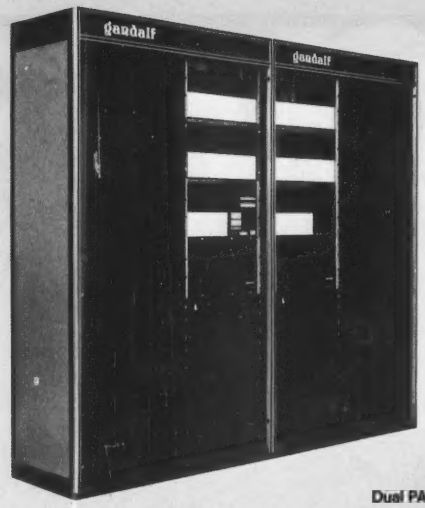
astrocom corporation
Delivering solutions in data communications.

PACX Systems

The family of Private Automatic Computer eXchanges (PACX) is designed to automatically connect a number of terminals having various service requirements to a number of computer ports capable of supporting those requirements. The PACX approach is modular, and allows you to expand in increments of 4 channels and 8 resource ports. Successive generations of PACX have offered increased sophistication and greater overall system control. No restriction on the number of simultaneous connections. Controlled access available.

System Configuration	System Capacity Terminals/Ports	Maximum Speed (bps) ASYNC	SYNC	Maximum Number of Service Classes
Mini PACX II	48/32	9600	19200	64
Mini PACX III	47/29*	9600	19200	63
PACX II	254/126	9600	19200	64
Dual PACX II	510/254	4800	9600	64
PACX III	253/125*	9600	19200	63
Dual PACX III	509/253*	4800	9600	63
PACX IV	256/128	9600	19200	128
Dual PACX IV	512/256	9600	19200	128

**Dependent on KCS system available*



Dual PACX IV

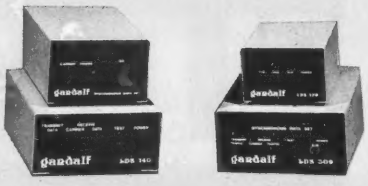
Modems & Data Sets

Synchronous

The synchronous line (LDS 250/3, LDS 309, LDS 329, LDM 404, SM 9600) includes short haul, medium distance and long haul units, with speeds up to 56000 bps. Widely acclaimed for their reliability, these units meet EIA RS232C and CCITT V.24 interface requirements in standard versions. Gandalf data sets conform to A.T.&T. pub. 41004 and 43401.

Asynchronous

The asynchronous line (LDS 100, LDS 120, LDS 140, LDS 319, and LDM 414) include short to limited distance units, with speeds up to 9600 bps. This complete line has won nationwide acceptance averaging 87,000 hours MTBF. Rack mounted or stand alone versions are available and are easy to install. Gandalf data sets conform to A.T.&T. pub. 41004 and 43401. Interface meets EIA RS232C and CCITT V.24 requirements.



Multiplexers

Gandalf offers a broad range of Asynchronous Statistical Multiplexers to meet every application need. The MX-4 and MX-8 meet the challenge of both low cost and minimal throughput delay; the PIN 9102 and 9103 meet the most demanding concentration requirements with high efficiency, X.25 capability, and full English-language control and performance statistics. These are complemented by the economical GLM 504 Synchronous Multiplexer.

Fiberoptic & Other Products

Fiberoptic data links and multiplexers have joined the dynamic Gandalf data communications product line! Other products include: interface converters, test sets, modem eliminators, modem eliminator/simulators and related equipment.

Call Gandalf for your next datacomm application. If a standard Gandalf product does not exactly fit your requirements, special engineering services are available. Call today.

gandalf

Gandalf Data, Inc. 1019 S. Noel Ave., Wheeling, Ill. 60090
(312) 541-6060 TWX 910-651-4951

Gandalf Data Ltd., Gandalf Plaza, Ottawa,
Ontario K2G 0B7 Canada (613) 225-0565 TLX 053-4728

Gandalf Digital Communications, Ltd. 4 Cranford Court,
Warrington, Cheshire, England 09-2581-7755 TLX 51629494

Products and Services Directory

Product Index

PRODUCT NAME	SECTION	PAGE
ACCESS PROGRAM SOFTWARE	Data Communications Software	135
ACOUSTIC COUPLERS	Data Transmission Equipment	50
ADAPTERS, MIL 188C	see MIL 188C Adapters	—
ADD-ON AUXILIARY MEMORY	Storage Devices & Media	100
ADD-ON MAIN MEMORY	Storage Devices & Media	100
ANALYZERS, PROTOCOL	see Protocol Analyzers	—
ANSWERING UNITS, AUTOMATIC	see Automatic Answering Units	—
APPLICATIONS PACKAGES, SOFTWARE	Data Communications Software	133
AUDIO RESPONSE UNITS	Data Terminals	111
AUTOMATIC ANSWERING UNITS	Support Equipment	141
AUTOMATIC CALLING UNITS	Support Equipment	141
BADGE READERS	Data Terminals	111
BAR-CODE READERS	Data Terminals	111
BATCH TERMINALS	Data Terminals	111
BRANCH EXCHANGES, COMPUTERIZED (CBX)	Data Concentration Equipment	25
BRANCH EXCHANGES, PRIVATE (PBX)	Data Concentration Equipment	25
BRANCH EXCHANGES, PROGRAMMABLE	Data Concentration Equipment	25
BROADBAND MODEMS	see Modems, Broadband	—
CABINETS	see Furniture, Cabinets, etc.	—
CABLES, ELECTRICAL, PREFABRICATED EXTENDER	Support Equipment	141
CABLES, LIGHTWAVE (OPTICAL FIBER)	Support Equipment	142
CALLING UNITS, AUTOMATIC	see Automatic Calling Units	—
CARTRIDGES	Storage Devices & Media	100
CARTRIDGE DRIVES	Storage Devices & Media	100
CASSETTES	Storage Devices & Media	101
CASSETTE DRIVES	Storage Devices & Media	101
CBX	see Branch Exchanges, Computerized	—
CHANNEL SERVICE UNITS	Data Transmission Equipment	50
CODE CONVERTERS	Support Equipment	142
CODE/PROTOCOL-CONVERSION PROGRAMS, SOFTWARE	Data Communications Software	133
COMPUTER/COMMUNICATIONS INTERFACES	Support Equipment	143
COMPUTERIZED BRANCH EXCHANGE (CBX)	see Branch Exchanges, Computerized	—
CONCENTRATORS	Data Concentration Equipment	25
CONSULTANTS, DATA COMMUNICATIONS	see Data Communications Consultants	—
CONTROLLERS, TERMINAL	see Terminal Controllers	—
CONVERTERS, CODE	see Code Converters	—
CORRECTORS, FORWARD ERROR	see Forward Error Correctors	—
CUSTOM PROGRAMS, SOFTWARE	Data Communications Software	133
DATA ACCESS ARRANGEMENT DEVICES	Support Equipment	144
DATA COMMUNICATIONS CONSULTANTS	Support Services	163
DATA COMMUNICATIONS SOFTWARE	Data Communications Software	133
DATA COMPRESSION DEVICES	Support Equipment	144
DATA CONTENT MONITORS	Diagnostic & Test Equipment	72
DATA ENTRY TERMINALS	Data Terminals	112
DATA ENTRY TERMINALS, PORTABLE	see Portable Data Entry Terminals	—
DATA JACKS & PLUGS	Support Equipment	144
DATA SECURITY DEVICES	Support Equipment	145
DATABASE PROCESSORS	Distributed Data Processing Systems	93
DDP SYSTEMS SOFTWARE	Data Communications Software	134
DIGITAL PLOTTERS	Data Terminals	113
DIGITAL SERVICE UNITS	Data Transmission Equipment	50
DIGITIZED VOICE PROCESSORS	Data Transmission Equipment	50
DIGITIZERS, VOICE	see Voice Digitizers	—
DISK DRIVES, FLOPPY	Storage Devices & Media	101
DISK DRIVES, LARGE	Storage Devices & Media	102

PRODUCT NAME	SECTION	PAGE
DISK PACKS	Storage Devices & Media	103
DISKS, FLOPPY	Storage Devices & Media	102
DISTRIBUTED DATA PROCESSING SYSTEMS	Distributed Data Processing Systems	90
EARTH STATIONS	Data Transmission Equipment	51
EDUCATIONAL SERVICES	Support Services	164
EIA CABLE TESTERS	Diagnostic & Test Equipment	72
ELECTRICAL-PARAMETERS TEST EQUIPMENT	Diagnostic & Test Equipment	72
ELECTRONIC MAILBOXES	Storage Devices & Media	103
EMULATION PACKAGES, SOFTWARE	Data Communications Software	134
ENCODERS/DECODERS	see Data Security Devices	—
EPBX	see Branch Exchanges, Programmable	—
ERROR CONTROLLERS	Support Equipment	145
ERROR RATE DETECTORS	Diagnostic & Test Equipment	73
EXTENDERS, PARALLEL LINE	see Parallel Line Extenders	—
FACSIMILE SERVICE CARRIERS	Communications Carriers	17
FACSIMILE TERMINALS	Data Terminals	113
FIBER-OPTIC SYSTEMS	see Lightwave (Fiber-Optic) Systems	—
FIRE DETECTION/PROTECTION EQUIPMENT	Support Equipment	145
FLOPPY DISK RECORDERS	Storage Devices & Media	103
FLOPPY DISKS	see Disks, Floppy	—
FLOPPY DISK DRIVES	see Disk Drives, Floppy	—
FM SYSTEMS	Data Transmission Equipment	52
FRONT-END PROCESSORS	Data Concentration Equipment	26
FUNCTIONAL PARAMETERS TEST EQUIPMENT	Diagnostic & Test Equipment	73
FURNITURE, CABINETS, TERMINAL ENCLOSURES	Support Equipment	146
GRAPHIC DISPLAY TERMINALS	Data Terminals	113
INFRARED SYSTEMS	Data Transmission Equipment	52
INTELLIGENT/PROGRAMMABLE TERMINALS	see Programmable Terminals	—
INTERACTIVE TERMINALS	Data Terminals	115
INTERFACES, COMPUTER/COMMUNICATIONS	see Computer/Communications Interfaces	—
INTERFACES, LOCAL NETWORK	see Local Network Interfaces	—
INTERNATIONAL RECORD CARRIERS	Communications Carriers	17
INVERSE MULTIPLEXERS	Data Concentration Equipment	29
JACKS & PLUGS, DATA	see Data Jacks and Plugs	—
LEASE & RESALE ORGANIZATIONS	Support Services	164
LIGHTWAVE (FIBER-OPTIC) SYSTEMS	Data Transmission Equipment	51
LINE CORRECTORS	see Power Supplies, Uninterruptible	—
LINE DRIVERS	Data Transmission Equipment	51
LINE-SHARING UNITS	Data Concentration Equipment	26
LOCAL NETWORK INTERFACES	Distributed Data Processing Systems	91
LOCAL NETWORK SOFTWARE	Data Communications Software	135
LOCAL NETWORKS	Distributed Data Processing Systems	90
MAINFRAME COMPUTERS	Distributed Data Processing Systems	93
MAINTENANCE ORGANIZATIONS	Support Services	165
MESSAGE CARRIERS	Communications Carriers	17
MESSAGE SWITCHERS	Data Concentration Equipment	27
MESSAGE SYSTEMS, VIDEO	Distributed Data Processing Systems	93
MESSAGE SYSTEMS, VOICE	Distributed Data Processing Systems	93
MICROCOMPUTER, MICROPROCESSOR SYSTEMS	Distributed Data Processing Systems	91
MICROFILM EQUIPMENT, SYSTEMS & SERVICES	Support Equipment	146
MICROWAVE/LASER SYSTEMS	Data Transmission Equipment	52
MIL 188C ADAPTERS	Data Transmission Equipment	58
MINICOMPUTERS	Data Transmission Equipment	92
MODEM ELIMINATORS	Data Transmission Equipment	58
MODEM-SHARING UNITS	Data Transmission Equipment	27
MODEMS, LIMITED DISTANCE	Data Transmission Equipment	52

PRODUCT NAME	SECTION	PAGE
MODEMS, MULTIPOINT	Data Transmission Equipment	53
MODEMS, MULTIPORT	Data Transmission Equipment	54
MODEMS, VOICE GRADE	Data Transmission Equipment	54
MODEMS, BROADBAND	Data Transmission Equipment	57
MONITOR & TEST SWITCHING EQUIPMENT	see Selection & Transfer Equipment	—
MONITORS, DATA CONTENT	see Data Content Monitors	—
MULTIPLEXERS, FREQUENCY DIVISION	Data Concentration Equipment	28
MULTIPLEXERS, GROUP BAND	Data Concentration Equipment	30
MULTIPLEXERS, INVERSE	see Inverse Multiplexers	—
MULTIPLEXERS, STATISTICAL (INTELLIGENT)	Data Concentration Equipment	29
MULTIPLEXERS, TIME DIVISION	Data Concentration Equipment	28
NETWORK MANAGEMENT CENTERS	Diagnostic & Test Equipment	74
NETWORK PROCESSORS, REMOTE	see Remote Network Processors	—
NETWORK SYSTEMS, LOCAL	see Local Network Systems	—
NETWORK-SIMULATION SERVICES	Support Services	165
OPERATING SYSTEMS SOFTWARE	Data Communications Software	135
OPTICAL FIBER CABLES	see Cables, Optical Fiber	—
OPTICAL FIBER SYSTEMS	see Fiber Optic Systems	—
PABX	see Branch Exchanges, Private	—
PACKET PROCESSORS	Data Transmission Equipment	30
PACKET-SWITCHING CARRIERS	Communications Carriers	17
PAPER FOR TERMINALS	Support Equipment	146
PARALLEL LINE EXTENDERS	Data Transmission Equipment	58
PATCHING EQUIPMENT	see Selection & Transfer Equipment	—
PBX	see Branch Exchanges, Private	—
PERSONAL COMPUTER COMM. SOFTWARE	Data Communications Software	136
PERSONAL IDENTIFICATION SYSTEMS	see Data Security Devices	—
PLOTTERS, DIGITAL	see Digital Plotters	—
POINT-OF-SALE TERMINALS	Data Terminals	116
PORT SELECTORS	Data Concentration Equipment	30
PORT-SHARING UNITS	Data Concentration Equipment	31
PORTABLE DATA ENTRY TERMINALS	Data Terminals	117
POWER DISTRIBUTION, REGULATION	Support Equipment	147
POWER SUPPLIES	Support Equipment	147
POWER SUPPLIES, UNINTERRUPTIBLE	see Uninterruptible Power Supplies	—
PRINTERS, REMOTE LINE	see Remote Line Printers	—
PRIVATE BRANCH EXCHANGES	see Branch Exchanges, Private	—
PROCESSORS, FRONT-END	see Front-End Processors	—
PROCESSORS, REMOTE NETWORK	see Remote Network Processors	—
PROGRAMMABLE TERMINALS	Data Terminals	114
PROGRAMMABLE BRANCH EXCHANGES	see Branch Exchanges, Programmable	—
PROTOCOL ANALYZERS	Diagnostic & Test Equipment	73
PROTOCOL CONVERTERS	Support Equipment	147
PULSE & SIGNAL REGENERATORS	Support Equipment	148
READERS, BADGE	see Badge Readers	—
READERS, BAR CODE	see Bar Code Readers	—
RECONFIGURATION EQUIPMENT	see Selection & Transfer Equipment	—
RECORDERS, FLOPPY DISK	see Floppy Disk Recorders	—
REGENERATORS	see Pulse & Signal Regenerators	—
REMOTE-JOB-ENTRY TERMINALS	Data Terminals	118
REMOTE LINE PRINTERS	Data Terminals	117
REMOTE NETWORK PROCESSORS	Data Concentration Equipment	31
RESALE ORGANIZATIONS	see Lease & Resale Organizations	—
RESPONSE-TIME MONITORS	Diagnostic & Test Equipment	74
RIBBONS & SUPPLIES FOR TERMINALS & PRINTERS	Support Equipment	148
RTS EMULATORS	Diagnostic & Test Equipment	74

PRODUCT NAME	SECTION	PAGE
SATELLITE CARRIERS	Communications Carriers	17
SATELLITE-DELAY-COMPENSATION UNITS	Support Equipment	148
SECURITY DEVICES	see Data Security Devices	—
SECURITY MODULES, SOFTWARE	see Data Security Devices	—
SELECTION & TRANSFER EQUIPMENT	Support Equipment	148
SERVICE BUREAUS	see Timesharing/Service Bureaus	—
SIGNAL REGENERATORS	see Pulse & Signal Regenerators	—
SOFTWARE, DATA COMMUNICATIONS	see Data Communications Software	—
SPECIALIZED CARRIERS	Communications Carriers	17
STATISTICAL MULTIPLEXERS	see Multiplexers, Statistical	—
SWITCHERS, MESSAGE	see Message Switchers	—
SWITCHES, DATA COMMUNICATIONS, AUTOMATIC	Support Equipment	149
SWITCHES, DATA COMMUNICATIONS, MANUAL	Support Equipment	150
TAPE DRIVES, MAGNETIC	Storage Devices & Media	104
TAPE, MAGNETIC	Storage Devices & Media	104
TAPE, PAPER	Storage Devices & Media	104
TAPE, PUNCH/READER, PAPER	Storage Devices & Media	105
TECH-CONTROL CENTERS	Diagnostic & Test Equipment	75
TELECONFERENCING NETWORKS	Distributed Data Processing Systems	93
TELEGRAPH CARRIERS	see Message Carriers	—
TELEPHONE COMPANIES	Communications Carriers	17
TELEPRINTERS	Data Terminals	119
TELEPROCESSING MONITORS	Data Communications Software	136
TELESCRIBERS	Data Terminals	121
TELETYPEWRITERS	Data Terminals	121
TERMINAL CONTROLLERS	Data Terminals	121
TERMINAL ENCLOSURES	see Furniture, Cabinets, Terminal Enclosures	—
TERMINAL INTERFACES	Data Terminals	122
TERMINALS, BATCH	see Batch Terminals	—
TERMINALS, DATA ENTRY	see Data Entry Terminals	—
TERMINALS, FACSIMILE	see Facsimile Terminals	—
TERMINALS, GRAPHIC DISPLAY	see Graphic Display Terminals	—
TERMINALS, INTELLIGENT	see Programmable Terminals	—
TERMINALS, INTERACTIVE	see Interactive Terminals	—
TERMINALS, PORTABLE DATA ENTRY	see Portable Data Entry Terminals	—
TERMINALS, REMOTE JOB ENTRY	see Remote Job Entry Terminals	—
TERMINALS, VIDEO DATA	see Video Data Terminals	—
TEST EQUIPMENT, ELECTRICAL PARAMETERS	see Electrical Parameters Test Equipment	—
TEST SWITCHING EQUIPMENT	see Selection & Transfer Equipment	—
TIMESHARING/SERVICE BUREAUS	Support Services	165
TRANSPORT SOFTWARE	Data Communications Software	135
UNINTERRUPTIBLE POWER SUPPLIES	Support Equipment	150
USED EQUIPMENT	Support Services	166
VALUE-ADDED CARRIERS	Communications Carriers	17
VIDEO DATA TERMINALS (KSR)	Data Terminals	123
VIDEO DATA TERMINALS (RO)	Data Terminals	124
VIDEO MESSAGE SYSTEMS	see Message Systems, Video	—
VOICE ADAPTERS	Support Equipment	151
VOICE DIGITIZERS	Support Equipment	151
VOICE MESSAGE SYSTEMS	see Message Systems, Voice	—
VOICE PROCESSORS, DIGITIZED	see Digitized Voice Processors	—
WORD PROCESSING PACKAGES, SOFTWARE	Data Communications Software	136
WORD PROCESSORS, COMMUNICATING	Data Terminals	125
WORD-RECOGNITION UNITS	Data Terminals	124

For questions concerning product categories listed in this edition, contact Special Projects Manager (212) 997-3382.

Facsimile-service carriers
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Satellite carriers
Specialized carriers
Telephone companies
Value-added carriers

Communications Carriers

The late 1970s gave rise to speculation about a new breed of network, one with a high degree of intelligence and user transparency. At the top of this list of networks were AT&T's Advanced Communications Service (ACS); Xerox's Telecommunications Network (XTEN); and Satellite Business Systems (SBS), the combined effort of IBM, Aetna Life & Casualty, and Communications Satellite Corporation. Now, long after these ambitious undertakings were supposed to have made their debuts, only SBS has gotten off the ground.

ACS is reportedly still a long way from reality as AT&T prepares its deregulated, arm's-length subsidiary, and XTEN has been scrapped, although the idea is still alive. Several carriers, including SBS and Tymnet, have given users hope that an XTEN-like service might still become a reality.

After testing their high-speed, local data-distribution network in New York City and San Francisco for six months, Tymnet has decided to move ahead with the commercial digital electronic message services (DEMSs). Tymnet plans a 50-city configuration, while SBS seeks a 30-city scheme to be used in conjunction with its existing networking services. The moves follow ISA Communications Services Inc.'s (Isacomm's) proposal for a similar 30-city network and Xerox's decision to abandon XTEN, on which the current proposals are based. If approved by the FCC, the new microwave-based local schemes could totally bypass telephone company circuits. Low-power microwave radios would transmit data up to 1.544 Mbit/s on channels 4-A (10.58 to 10.585 GHz) and 4-B (10.645 to 10.650 GHz). Each radio covers an area with a 6-mile radius, and each node can serve up to 100 subscriber locations. Although Tymnet is believed to be negotiating with SBS and another partner in the experimental network, Local Digital Distribution Company (a joint venture of M/A Com Inc. and Aetna Life & Casualty), to join in the commercial network, there is still no indication as to whether there will actually be a tie-in between these companies.

In a related development, United Telecommunications, the third largest U.S. telephone company, is buying its way into satellite digital communications. Anticipating a stock transaction worth $41.5 million, United has agreed to acquire Insurance Systems of America, a software company that, in turn, has a controlling interest in Atlanta-based Isacomm. Isacomm acts as a resale carrier through the SBS network and also plans to couple its satellite service with microwave links to create a 40-city network for video teleconferencing, high-speed document distribution, and computer-to-computer bulk-data transfer.

But while these firms all hopped on the XTEN bandwagon, users were still wondering about the future of such networks because of the demise of the archetype.

XTEN short-circuited

In announcing its plans to discontinue its XTEN program, Xerox said that "the concept is technically feasible, but that the economics, for Xerox, are not. Other demands on the company's resources, combined with the substantial economic environment of high interest rates and inflation, have diminished the attractiveness of the XTEN investment to Xerox."

Although the move had long been rumored, the cancellation of XTEN met with disappointment and raised questions as to how it might affect the future of Ethernet, the local network on which Xerox has focused much recent attention. But intraoffice, not interoffice, communications had become Xerox's top priority.

XTEN would have been a nationwide, end-to-end, intelligent network made up of satellite and microwave links, local city nodes, and earth stations. Xerox had originally proposed serving as many as 200 cities, although that number had recently been scaled down to about 50. The network would have supported various office equipment and offered data transmission rates of up to 256 kbit/s. But perhaps the biggest advantage of XTEN would have been as an alternative to the telephone company for local-loop service.

One major user who is now testing an Ethernet setup at his company and who was a potential XTEN customer now says that he will reevaluate the local network in view of the XTEN cancellation. Still, Xerox is confident that its Ethernet plans will be affected minimally, despite a long-held contention by many industry observers that XTEN was the Ethernet to the outside world. Many observers hope that networks such as the ones proposed by Tymnet and SBS will fill the void.

The FCC several months ago reallocated 130 MHz of the radio spectrum for the intracity links of digital communications networks. The action was taken in response to Xerox's 1978 petition for rulemaking with the FCC to allocate the 10.55- to 10.68-GHz band for common-carrier electronic message service.

The first signs that XTEN would never materialize began to surface last year when the project fell under the wing of Western Union International (WUI), a Xerox subsidiary. XTEN's president, J. Thomas Lawson, soon resigned, and Edward Gallagher, president of WUI, took over the project.

Meanwhile, several value-added carriers were planning to enhance their offerings to achieve greater intelligence and lend credence to the notion that they will probably beat AT&T at its own game when it comes to ACS. Tymnet, GTE Telenet, and Datapac, the computer communications group of the TransCanada telephone network, completed work on a common 3270 protocol. The software would allow a 3270 user in Canada to access a host computer in the United States through one of the networks. Tymnet had already introduced its own 3270 protocol but found customers also clamoring for the ability to access 3270 terminals in Canada, which the company could not provide without a standard interface.

SNA features in IBM environment

Customer interest appears to be based mainly on financial considerations. Actually, the protocol standard has advantages over using leased phone lines because it permits the user to have full SNA features in a non-SNA environment. For example, 3270 terminals in the same location can access separate 3270 applications on either the same or different host computers, which is not possible over end-to-end phone lines.

The common protocol, modeled after Datapac's 3303, does not incorporate end-to-end polling as in a standard SNA network. The front end for the computer handling a 3270 application polls the packet-switching node as if it were talking to 3270 terminals. At the other end, the terminals respond to polling from a terminal-interface node, thinking they are talking to the front end. The overall speed of communications over the network is the same as with a remote bisynchronous 3270 network.

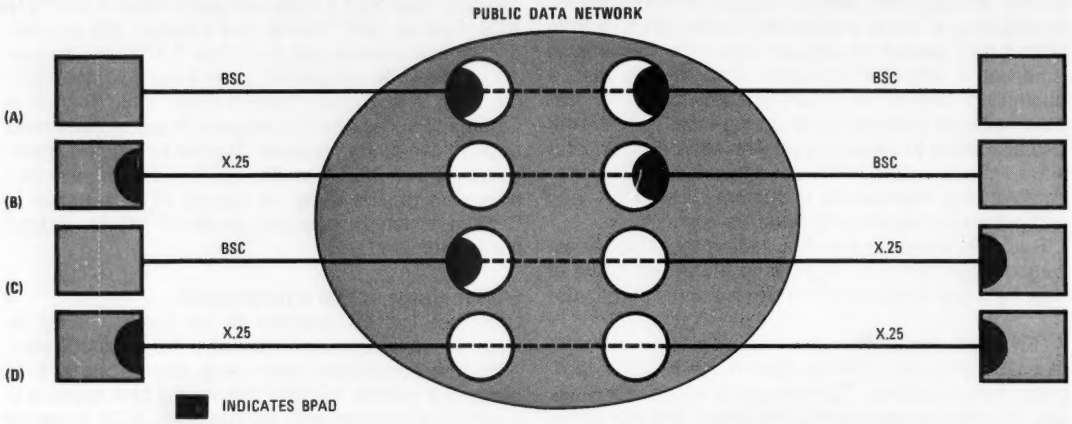
The three companies worked together on the protocol but, in essence, adopted the Datapac version of the higher-level support existing beyond the X.25 interface protocol. Although the protocol is different, the 3303 is conceptually similar to the IBM 2780/3780 standard designed by GTE, Datapac, and Kokusai Denshin Denwa (KDD) in Japan. This interface, a binary synchronous packet assembler/disassembler (BPAD), will entitle 2780/3780 terminal users to the efficiencies and extended capabilities inherent in a packet-switched network.

For a host to handle nonpacket-mode devices—such as asynchronous terminals or terminals like the 2780s and 3780s that communicate using IBM's binary synchronous communications (BSC) protocol—a higher-level protocol must be implemented within the X.25 software to perform protocol conversion.

Users have not demanded, to any great extent, that public networks implement higher-level protocols within X.25, which would make it possible for hosts to communicate synchronously with non-X.25 terminals. Rather, standards organizations have expected manufacturers to develop entirely new terminal products that communicate directly to the packet network via X.25. The three carriers' terminal-emulation-type of interface will make it possible for non-X.25 terminal hardware to access packet networks, whether or not the manufacturer supplies X.25 interface software.

BPAD, a set of software modules, can map the BSC

1 Conversion implementations



protocol into X.25 through virtual-circuit procedures for transmitting data and control information between the host and the terminal. Data is transferred using a minimal amount of control information in the data block. Special, or "qualified," data packets are used to transmit control information. The terminals arrange the data into blocks that the sending BPAD forms into packets and the receiving BPAD reconverts into blocks.

BPAD protocols are designed to remain as transparent as possible to the user. Generally, users need not make any software or hardware modifications to include their networks in the communications link.

Conversion configuration

Some equipment supported by this BPAD interface are IBM and IBM-compatible 2770, 2780, 3740, 3770, and 3780 terminals; most IBM operating systems; and emulation packages available on many non-IBM CPUs—collectively called the "X780 series," since the 2780 and 3780 are the most common terminals in the group.

Depending on whether the BPAD is implemented in a network node or in an X780 terminal/host, several configurations are possible (Fig. 1). For hosts or intelligent X780 devices with X.25 interfaces, Figures 1B, 1C, and 1D show the most efficient implementations: The need to translate to and from a BSC protocol has been eliminated on one or both ends of the connection.

However, by implementing the BPAD in the network node, as in Figure 1A, no software changes are needed in existing X780 equipment. The BPAD simply appears to the BSC device as another BSC device, using leased or dial-up lines and the IBM BSC protocol. The BPAD then maps this BSC protocol to the X780 protocol, through its X.25 network interface, to communicate with the remote BPAD.

The X780 BPAD, as defined by the three carriers, does not specify the interface between a BSC device and BPAD. Instead, the electrical interface and BSC protocol are defined by IBM. Basically, the BSC protocol is logically half-duplex and therefore requires one of the BSC devices to have control of the line at any given time. That device "bids" for line control when the line is idle, and when one BSC device has data to transmit, the device sends a control sequence containing a request to initiate transmission. If the remote BSC unit grants permission to initiate transmission, the data flow begins. After a data block is transmitted, the sender awaits a positive acknowledgment (ACK) from the remote device, indicating that the block was received correctly. If the block was not received correctly (negative acknowledgment), it is retransmitted.

Following the ACK, the data block is discarded and the next one is sent. When all data blocks have been transmitted successfully, the sender transmits an end-of-transmission control sequence. This causes the line to return to its idle state, at which point either of the two BSC devices can again bid for control of the line. One BSC device is assigned primary status, and the other secondary status, to resolve bid collisions.

A data block is framed by control characters. This framing allows the modems to synchronize characters, defines the beginning and end of the actual data, and provides checksums to detect transmission errors. (The checksum technique uses sophisticated algorithms based on the summation of characters' binary-digital representations.) Typical transmissions comprise several data blocks with, for example, a number of punched-card images or print lines per data block. A number of blocks make up a file equal to, say, a "deck" of cards or a printed listing. Separate control characters (ETB, end-of-text block) are defined to differentiate all data blocks from the last data block of the file (ETX, end-of-text).

Several parameters should be programmed into one or both of the BPADs. These contain information such as the access type (leased or dial-up), the terminal type (2780 or 3780), the character code (ASCII or EBCDIC), the block size (128, 256, 512, or 1,024 characters), the transmission speed, and the significance of acknowledgment. These parameters may

change from one terminal session to another and are therefore communicated between the BPADs in the request to establish an X.25 virtual circuit (VC).

The SBS connection

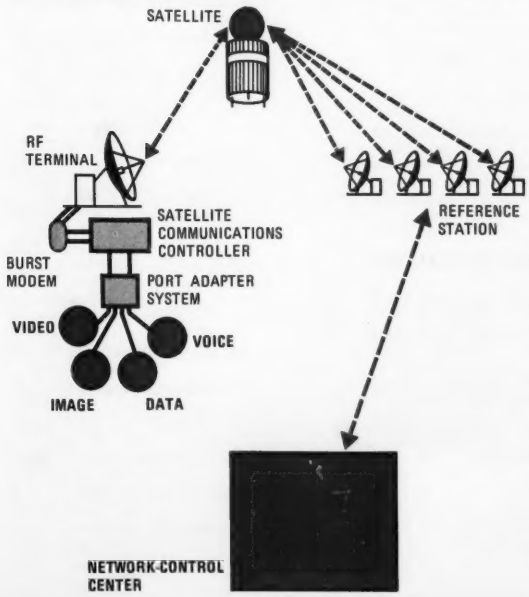
As Tymnet, Telenet, Datapac, and KDD were looking for ways to improve their existing networks, one of the most anxiously awaited enhanced networks—SBS—made its debut.

SBS had emphasized that its satellite network was being designed with only the largest U.S. firms and government agencies in mind. But in its tariff filing with the Federal Communications Commission, the company indicated that it expects smaller users to share earth stations in order to use SBS by January 1982. In addition, SBS says that it will provide a low-cost, interstate voice service that will eventually link as many as 150 U.S. cities.

For now, however, the heart of the SBS service remains its integrated, all-digital private communications network for organizations with huge communications requirements (Fig. 2). Eight large organizations, including Boeing Computer Services, IBM, Aetna Life & Casualty, and Travelers Insurance Company, have already signed for the service and typically will pay $110,000 and more a month for the network.

Having begun operation in January, SBS includes telephone communications; computer-to-computer links; high-speed, electronic document communications; and video teleconferencing. A company or government agency adopting the service must agree to have at least three earth stations on its premises. These "network-access centers" are both owned and maintained by Satellite Business Systems. The basic monthly charge for each center is $12,500. SBS will assign satellite-transmission capacity in blocks called "transmission units." One such unit is equivalent to 224 kbit/s of simplex capacity and comes in two varieties. A full-time transmission unit is 224 kbit/s assigned to a network 24 hours a day, seven days a week. A minimum number of these units required in a network is equal to its number of network-access centers. The monthly charge per full-time transmission unit is $2,100. The "demand transmission unit," on the other hand, can be assigned to a network on a demand or contention basis from a pool of satellite capacity. This transmission unit is supposed to accommodate occasional or unexpected peaks in customer usage. The charge of this kind of unit is approximately $40 an hour, or 1.12 cents a second.

2 SBS networking scheme



The final piece of the network, which has its own set of charges, consists of "connection-arrangement units." These units provide the connection between customer equipment, including PBXs and computers, and the network-access center. There are three kinds of connection-arrangement units: analog, which range in price from $50 to $110 each, depending on the number of connection-arrangement units per network-access center; digital for nonswitched service, with monthly costs from $150 to $3,000 each, depending on the data rate; and digital for switched service, where monthly rates vary from $165 to $3,000 each, again depending on the data rate.

The total charge for what SBS has decided to call Communications Network Service-A (CNS-A) is based on a customer's specific network configuration and is the sum of all these parts. For example, a customer might have a network of three earth stations where satellite capacity is used for voice and data applications, such as electronic mail. The organization's total monthly costs would be:

- Three network-access centers (at $12,500 each) = $37,500
- Twenty-five full-time transmission units (at $2,100 each) = $52,500
- Seventy-five switched voice-grade connection-arrangement units (at $110 each) = $8,250
- Four switched digital 1.5-Mbit/s connection-arrangement units (at $2,750 each) = $11,000
- Total per month = $109,250

More often than not, large SBS customers will probably find their monthly bills to be even higher. SBS promises in its FCC filing that, at a customer's request, the company will contract with other common carriers or construct the necessary facilities to link the network-access centers with the rest of the customer's locations, including remote sites.

The company's second private-network offering, Communications Network Service-B (CNS-B), will offer many features of CNS-A. Each CNS-B network will have a minimum of three network-access centers, but one of these may be a "service point," which is an SBS facility not situated on the user's premises. Initially limited to voice applications, these service points eventually will accommodate digital data communications

of up to 56 kbit/s.

SBS's planned rates for this service are $7,500 per month for each network-access center and $3,000 per month for each service point. Full-time transmission units will cost $2,100 each; connection-access units will range from $250 to $3,300, depending on the type.

The company has also asked the FCC for authorization to permit CNS-B customers to place voice calls from locations on their networks to off-network stations via shared telephone company facilities between CNS-B earth stations and telephone company exchanges. This option would be available with CNS-B in January 1982. CNS-B users will initially be able to access off-network stations in 75 U.S. metropolitan areas and in 150 areas by mid-1983. The tariffs for this optional feature are 15 cents per minute from an earth station or SBS facility for the initial 120 hours during a monthly billing period, 10 cents for the next 480 hours, and 9.5 cents beyond 600 hours.

Through its plans to establish a network of 20 earth stations and associated facilities to provide a low-cost, interstate voice service connecting 150 U.S. cities, SBS hopes to attract organizations of all sizes. The company will offer a WATS-like service, based on dedicated access channels between a customer's calling locations and the SBS earth stations. It will also provide an MTS-like service, which will allow dial-up access to the earth station by using identification codes. Satellite Business Systems will file rates with the FCC for these message services in 1981. ■

For more on carriers, see the following DATA COMMUNICATIONS articles.

1. "Analyzing IBM 3270 performance over satellite links," George Deaton and David Franse, October 1980, p. 117. A model analysis shows how to optimize response times and line utilization.

2. "Communications invades the homefront," Lee R. Greenhouse, February 1981, p. 56. The author details home-information networks and how communications carriers will play a role in them.

3. "AT&T's new offspring signals the end of business as usual," Colin Ungaro and Edith Holmes, March 1981, p. 44. What to expect when the largest common carrier is unleashed in unregulated areas.

4. "Foreign exchange service can save U.S. dollars," Gilbert Held, July 1981, p. 65. How this service may provide a less costly alternative to leased lines or direct distance dialing.

5. "PTT on the defensive as deregulation begins in the UK," Peter Heywood, September 1981, p. 34. Once the only carrier in its country, the British Postal Telegraph and Telephone (PTT) agency becomes the first such agency forced to respond to new networks.

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American Satellite Company
Rockville, MD
Cable & Wireless NY Inc
New York, NY
Graphnet Inc
Teaneck, NJ
Hawaiian Telephone Co
Honolulu, HI
ITT World Communications Inc
New York, NY
Muirhead Inc
Mountainside, NJ
RCA American Communications Inc
Princeton, NJ
RCA Global Communications Inc
New York, NY
Western Union International, Inc
New York, NY

INTERNATIONAL RECORD CARRIERS

Cable & Wireless NY Inc
New York, NY
Canadian Marconi
Montreal, Quebec,
Canada
Com-Switch Telecommunications
Processing Corp
New York, NY
FTC Communications Inc
New York, NY
ITT World Communications Inc
New York, NY
RCA Global Communications Inc
New York, NY
TRT Telecommunications Corp
Washington, DC
Western Union International, Inc
New York, NY
Xerox Corporation
Stamford, CT

MESSAGE (INCLUDING TELEGRAPH) CARRIERS

American Satellite Company
Rockville, MD
Cable & Wireless NY Inc
New York, NY
Canadian Marconi
Montreal, Quebec,
Canada
Com-Switch Telecommunications
Processing Corp
New York, NY
Graphnet Inc
Teaneck, NJ
GTE Lenkurt Inc
San Carlos, CA
GTE Telenet Communications Corp
Vienna, VA
Hawaiian Telephone Co
Honolulu, HI
ITT World Communications Inc
New York, NY
Mohawk Data Sciences Corp
Parsippany, NJ
Pacnet Corp
Dallas, TX
RCA American Communications Inc
Princeton, NJ
RCA Global Communications Inc
New York, NY
South Central Bell Telephone Co
Birmingham, AL
TRT Telecommunications Corp
Washington, DC
Tymnet Inc
Cupertino, CA
Western Union International, Inc
New York, NY
The Western Union Telegraph Co
Upper Saddle River, NJ

PACKET-SWITCHING CARRIERS

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GTE Telenet Communications Corp
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Hawaiian Telephone Co
Honolulu, HI
ITT World Communications Inc
New York, NY
Northern Telecom Inc
Nashville, TN
RCA Global Communications Inc
New York, NY
Sytek Inc
Sunnyvale, CA
Tandem Computers
Cupertino, CA
TRT Telecommunications Corp
Washington, DC
Tymnet Inc
Cupertino, CA
Western Union International, Inc
New York, NY

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New York, NY
Communications Satellite Corp
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Cylix Communications Network
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GTE Fiber Optics Comms Div
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GTE Lenkurt Inc
San Carlos, CA
GTE Satellite Corp
Stamford, CT
ITT World Communications Inc
New York, NY
RCA American Communications Inc
Princeton, NJ
Satellite Business Systems
McLean, VA
Western Union International, Inc
New York, NY
The Western Union Telegraph Co
Upper Saddle River, NJ

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Mountain View, CA
GTE Lenkurt Inc
San Carlos, CA
ITT - US Transmission Systems Inc
New York, NY
Pacnet Corp
Dallas, TX
RCA American Communications Inc
Princeton, NJ
SP-DMS
McLean, VA
Stanford Telecommunications Inc
Sunnyvale, CA
Teltone Corp
Kirkland, WA
Western Tele-Communications Inc
Denver, CO
Western Union International, Inc
New York, NY
The Western Union Telegraph Co
Upper Saddle River, NJ

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Morris Plains, NJ
Cincinnati Bell
Cincinnati, OH
Compania Dominicana de Telefonos,
C Por A
Santo Domingo,
Dominican Republic
Data Equipment Inc
Sunnyvale, CA
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
General Telephone Co of Wisconsin
Sun Prairie, WI
GTE Fiber Optics Comms Div
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Atlanta, GA
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Canadian Marconi
Montreal, Quebec,
Canada
Com-Switch Telecommunications
Processing Corp
New York, NY
Cylix Communications Network
Memphis, TN
Datapoint Corporation
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Graphnet Inc
Teaneck, NJ
GTE Telenet Communications Corp
Vienna, VA
ITT - US Transmission Systems Inc
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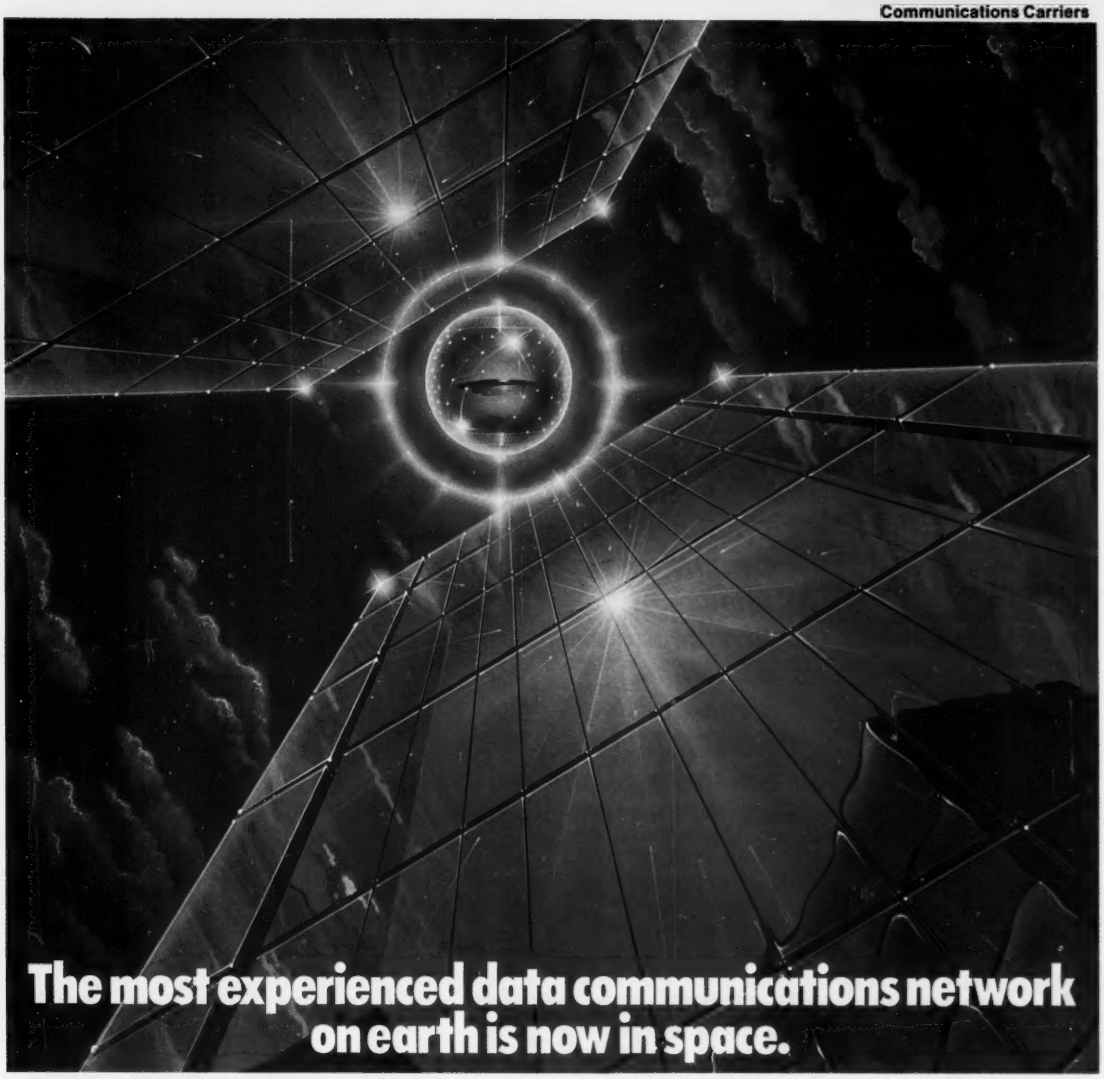

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Data Concentration Equipment

The development of the automated office has been likened to building a house from the top down. Although the building blocks—office-oriented workstations, processors, and software—are constantly being introduced, there is still no clearly defined foundation for binding them. In other words, there is a lack of efficient communications.

However, there appear to be two competing solutions to that problem, which have prompted debate that is sure to continue for years. On one side of the debate are the local-network proponents, who insist that the answer to interconnecting different types of office devices lies in local networks. On the other side are advocates of a solution that offers many more commercially available alternatives. It involves a central switch—commonly called the computerized private branch exchange (CBX). (See figure.)

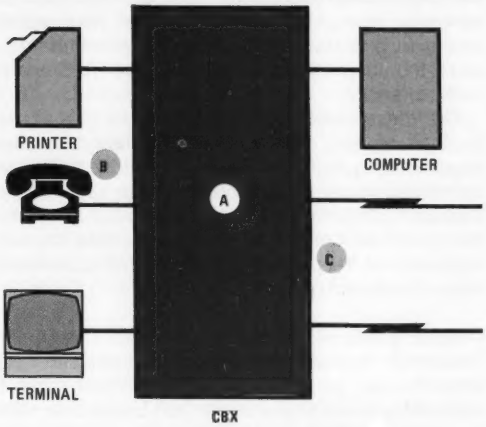
Although local networking has lately received wide attention, it is a technology with one foot still in the research laboratory. Depending on one's definition of a local network, there are really only a few commercial offerings, none of which are yet compatible—or interconnectable—with each other.

The distinguishing characteristic of local networks is that each station (say, a terminal or minicomputer) requires its own "intelligence" module for handling network access and egress (and additional functions such as error checking, addressing, and forming data packets). In CATV-based installations, however, only an RF (radio-frequency) modem may be needed.

The CBX approach is much different. All routing and switching logic is centralized. And, while the CBX ports may need to be dedicated to certain types of terminal devices (either phone sets, teletypewriters, or facsimile machines, for example), all traffic within the switch is digitized and handled as if it were data.

A CBX is a computer-driven private branch exchange (PBX) that contains its operating instructions in programmable storage. Because of this, the user can usually define and alter a CBX's operation.

Two solutions to office automation

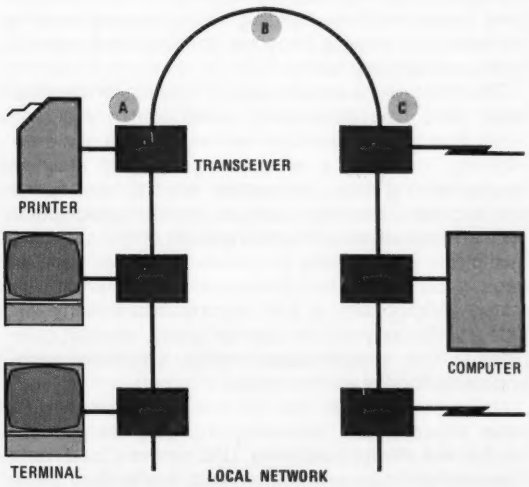


CBX CONFIGURATION

(A) NETWORK CONTROL CENTRALIZED IN CBX, PERMITTING SHARED-INTELLIGENCE FUNCTIONS SUCH AS LEAST-COST ROUTING.

(B) VOICE FULLY INTEGRATED, EITHER PROPRIETARY OR INDUSTRY-STANDARD PHONE SETS.

(C) CENTRALIZATION PERMITS MODEM SHARING OR POOLING, INTERFACING TO WIDEBAND FACILITIES, AND MULTIPLEXING.



(A) NETWORK CONTROL DISTRIBUTED TO INTERFACE PROCESSORS.

(B) CARRIER TYPICALLY BASEBAND COAXIAL OR CATV CABLE—HIGH BANDWIDTH BUT LIMITED DISTANCE.

(C) INDIVIDUAL GATEWAY "STATIONS" FOR INTERFACING TO LONG-HAUL FACILITIES.

Two modulation techniques embody the essential differences between voice and data traffic, and both are used in today's CBXs. The older of the two, pulse-amplitude modulation (PAM), is optimized for voice. It requires relatively little bandwidth and has a comparatively low signal-to-noise ratio.

On the other hand, there is pulse-code modulation (PCM), the technique best employed for data, which needs more bandwidth but has a much higher signal-to-noise ratio. For voice, which does not require the correct interpretation of every signal, PAM is the preferred modulation scheme because it supports high traffic capacity. When the integrity of every bit is critical, as with data, PCM is used to achieve the necessary quality. Paradoxically, the CBX does not necessarily need to switch and handle traffic internally using PCM, and it may, in fact, use PAM.

However, the CBX generically represents a move by the switch industry from PAM to PCM. It seems that one of the last PAM holdouts is AT&T, whose current offering, the Dimension PBX, still employs the older analog techniques. Nevertheless, Dimension is considered a member of the CBX family because it is computer-driven, and, in many respects, its operational parameters are user-definable.

The way station

It follows that the CBX serves as a way station in the technological migration from the analog world to one where all-digital traffic prevails. And despite the analog orientation of its Dimension switch, AT&T is increasingly converting its carrier equipment to digital. According to a recent report by Frost & Sullivan Inc., a New York City-based consulting firm, at least half of all AT&T's installed toll and local switching equipment will be digital by 1985. The majority of its trunks, which link local and regional switching offices, are already digital. It is also predicted that the sale of codec chips, which convert analog voice to digital and vice versa, will multiply eightfold over the next five years.

The CBX appears ideally poised to accommodate this digital revolution. The lifespan of an installed PBX is quickly dwindling because of technological and price-pattern changes, and forecasters predict that current PBXs, with an installed life of from 10 to 12 years, will be replaced in the next few years with ones lasting only 6 or 7 years. This inevitable conversion is perhaps the greatest inducement for customers to consider the new line of CBX products.

It appears that functionality, not cost, is the key consideration for users who are trying to decide between the CBX and the local-networking approach. Although voice has not been clearly integrated yet on any commercial local-network products, this has long been a feature of the CBX (although the degree of transparency varies from vendor to vendor). This is because the local network has its origins in high-speed processor-to-processor data communications, while the CBX has evolved from the voice-only PBX.

In the area of long-distance communications, a big plus for the CBX is its efficient, and now mature, software that offers the user route optimization, or

least-cost routing. With the CBX, users can take advantage of the same dynamic route-selection intelligence for dial-up data connections that has long been applied to voice communications. And as the cost of long-distance facilities continues to skyrocket, a PBX that handles data begins to look more and more attractive.

Costing out the two schemes

Although the pricing structures for the two products (local networks and CBXs) are very different, the cost per station connection for both is surprisingly comparable. Although the per-port price of a CBX configuration varies depending on the features, the vendor, and, most important, the total number of ports, $1,000 per connected station is average. Coincidentally, the cost per interface module for, say, Xerox Corporation's Ethernet also hovers at about $1,000. And even though local-network proponents maintain that a single network interface can support multiple devices (say, a terminal cluster), such concentration features can also be incorporated in CBX products.

Another factor nudging users toward CBX implementation involves data rates. For the most part, a dial-up data connection can support data rates of no more than 1.2 kbit/s, which is generally considered too slow for computer-to-computer communications. But, although local networks can handle much higher rates internally, any long-distance traffic must leave the local configuration via a gateway. Xerox's Ethernet gateway to long-distance facilities, for instance, supports a data rate of 9.6 kbit/s.

Although the CBX's star topology invariably mandates more linear feet of wiring to connect *n* devices than does a local network, the CBX uses conventional twisted pairs. In addition, most CBXs support existing rotary and touchtone phone sets as well. However, many CBX vendors also offer proprietary phone sets (some digital), which are often necessary to take full advantage of the CBX's features.

If a user wants to buy a CBX, or at least investigate the available products, he should examine several criteria. In particular areas, there are significant differences among CBXs. These are:

- Port, or line, capacity and relative throughput
- Terminal support, including data rates and protocol conversion
- Blocking or nonblocking architectures

Port capacity and relative throughput are two areas that have generated considerable controversy. The number of stations (or lines) desired usually consists of a "typical mix" of industry-standard and proprietary phone sets and data terminals. A practical high-end figure is generally lower than the vendor's stated maximum capacity.

Throughput is measured in ccs, a unit of traffic quantity borrowed from the telephone industry. Technically, one ccs is the quantity represented by one 100-second call, or by an aggregate of 100 call-seconds of traffic. In reality, ccs is an ambiguous unit of measurement, because although it is related to traffic intensity (the traffic quantity in one or more traffic paths per unit of time), there is no direct translation formula. Traffic intensity, on the other hand, is usually expressed as a dimensionless ratio, called an erlang, which refers to the continuous occupancy of one traffic path. It is generally accepted that 36 ccs per hour equals 1 erlang or one traffic path occupied full-time. In most uses, the unit ccs implies a "per-hour" relationship to traffic intensity.

The measurement of throughput using voice terms (instead of, say, kbit/s) is appropriate because the overwhelming bulk of CBX traffic is still dial-up voice communications. And although these terms may be perplexing to many data communications managers, they must be considered along with data capacities, especially as the percentage of data traffic increases in future integrated networks.

Overall 'grade of service'

Data traffic typically requires fewer connection establishments but generally longer connection times than voice calls. Accordingly, as the number of data stations increases in a CBX configuration, the number of traffic paths available for voice conversation decreases in a geometric, not a linear, manner.

The mixture of data and voice inputs, coupled with the number and types of trunk (or output) lines, determines a CBX's overall "grade of service." This refers to the anticipated ratio of calls "lost" at the first dial-up attempt to the total number of connection attempts during a period of time.

Another data-concentration device—the statistical multiplexer—is also becoming available from an increasing number of vendors. Statistical-multiplexer technology has been dynamic. Since its inception, the multiplexer has evolved into one of the most versatile data communications building blocks, closely tracking the needs of growing networks to adapt to increased traffic and terminal types.

The most pronounced areas of multiplexer development have been monitoring, configuration programming, flow control, and the handling of data channels. However, reversing a recent trend, vendors are now deemphasizing data compression in multiplexer operation because it has not proved as efficient as expected.

One of the most attractive features of the statistical multiplexer is its ability to concentrate data simultaneously from both asynchronous and synchronous terminals. Additionally, it can accommodate many line types, which may vary in channel speed, stop-bit combination (for asynchronous traffic), character code, and parity (odd, even, or none).

However, although the statistical multiplexer can serve different data terminals, changing the terminal mix has not always been easy. Until recently, each data channel had to be preprogrammed. Traffic from asynchronous terminals had to access data channels equipped with a special interface chip—the UART (universal asynchronous receive and transmit), while synchronous traffic required data channels configured with a USRT (universal synchronous receive and transmit) interface chip. Because of the difficulty in changing the channel interface chips, the statistical multiplexer was more or less limited to the mix of terminals present

when the network first went into operation.

Within the past several years, however, the need for greater flexibility has been met by the USART (universal synchronous/asynchronous receive and transmit) chip, which has replaced the UART and USRT on each data channel. The USART allows each channel to carry either asynchronous or synchronous traffic. With the old UART/USRT, network-configuration programming generally allowed only one line type (picked from a relatively limited menu of 10 to 20) for each data channel. Increasing the size of the menu was possible, but often involved tedious additional programming. With the USART, users can select from a combination of 16 speeds, 3 stop-bit combinations, 4 character codes, and 3 parity selections—a total of 576 combinations.

In the past, adding data channels was also a complicated procedure. Although it was relatively simple to physically add channels, it was not as easy to add memory to counter the increase in input data feeding into the data link. Buffer-pool memory was comparatively expensive, and there was little room on printed circuit boards to fit extra memory. As a result, upgrading the multiplexer came to mean that the amount of buffer-pool memory per data channel decreased. The frequency with which the buffer pool experienced overloading correspondingly increased. This taxed the limited input flow control of the multiplexer.

Bigger buffer pools

Advances in LSI (large-scale integration) technology have since eliminated buffer contention as the price for increasing the number of data channels, and now an enormous amount of memory can be incorporated in the statistical multiplexer's buffer pool at relatively low cost. For example, just four years ago, a typical buffer pool was from 16 to 32 kbytes. Now, statistical multiplexers have about 4 kbytes per data channel—often with 100 kbytes of memory in the entire unit.

However, this increase in buffer memory has also increased the propagation delay of data through the statistical multiplexer. With more space on the queue feeding data into the channel, each data bit has to spend more time moving along this longer queue. But this is still preferable to having a data bit stuck in an external memory device waiting for an overloaded multiplexer buffer to clear.

Flow-control and other enhancements

Actually, the tremendous growth in statistical-multiplexer memory has allowed these devices to become, effectively, peripheral memory for data terminals and the CPU. Consequently, terminal devices can more quickly free their own memory and devote it to computation rather than communications. This trend of placing more and more memory in statistical multiplexers will most likely continue. As higher-capacity data links (based, for example, on lightwave technology) become available, vendors will introduce more and more high-speed terminals to use them.

However, as the statistical multiplexer gains greater data-storage capability, it also risks losing more data in the event of a failure. The true advantage of a larger buffer pool will be realized only if there is a corresponding improvement in multiplexer reliability.

Enhancements are being added to the statistical multiplexer that facilitate data traffic control and end-to-end message integrity. Even if communications links are performing according to specification, data can still be lost if transmission rates are improperly matched to the data rate of connected devices. Thus, the pacing and throttling of traffic is critical.

While statistical multiplexers typically do not manage network traffic, they are participating more and more in this function. To prevent data loss, the multiplexer must regulate traffic flow into and out of the network.

Input flow control requires that the multiplexer monitor an external device feeding it. All statistical multiplexers match incoming traffic to the data-link rate by buffering. However, when the number of bits arriving during a fixed time period exceeds the number of bits that the link can transmit during this same period, the buffer pool can fill rapidly to capacity. The statistical multiplexer must regulate the incoming flow to stop data loss due to buffer overloading.

Strange as it may seem, for a long time, many statistical multiplexers simply ignored the problem of input flow control. When there was a significantly large surge of input data, the buffer pool simply overflowed and data was lost. Subsequent data, arriving during an overflow condition, was also lost.

The economy achieved by omitting flow-control procedures was a false one. Without it, an end user would see "holes" in the data stream delivered to him. Statistical multiplexers that did address the problem of input flow control used one of two possible methods: a physical layer protocol (handshaking between the external data device and the multiplexer) and inband signaling (intradevice communications over the same frequency used for transmitting data).

Both techniques accomplished input flow control, but they achieved it at the expense of network flexibility. The input flow-control procedure was a "box parameter"; that is, it was specified the same for all data channels and frozen in programming at the factory. The statistical multiplexer typically could not accommodate different input flow-control procedures on different data channels, and, as a result, the multiplexer was constrained to certain types of external data devices. If the data communications manager wanted to change the network and integrate devices not matched to the programmed flow-control procedure, he had to bring the entire network down (put out of service) and have it reprogrammed. Even with inband signaling, anything beyond the ASCII command was often considered special order.

In today's statistical multiplexers, input flow control is no longer a box parameter—separate flow-control procedures can be programmed for the different data channels. As a result, the multiplexer configuration can accommodate many types of terminals (ASCII, EBCDIC, and even terminals on modem tail circuits). Also, the input flow-control procedure can be easily reprogrammed in the field while the network stays in

operation. In fact, the data channel being reprogrammed generally need not be brought down. ■

For more on data concentration, see the following DATA COMMUNICATIONS articles:

1. "The new network roles of the statistical mux," Joseph Visvader, June 1981, p. 83. This article explores the effects of multiplexer enhancements in programming, monitoring, reconfiguration, and diagnostics.

2. "The new breed—Switching muxes," Thomas H. Scholl, June 1981, p. 99. The multiplexer's newest talent brings economical switching to even the smallest networks.

3. "CBXs have inside track in office race," June 1981, p. 48, and "CBX unveilings continue at a fast pace," July 1981, p. 44, Edwin E. Mier. The CBX approach to the automated office centralizes all routing and switching logic. Here is a sampling of the available products.

4. "Mux is IBM users' bridge to X.25 networks," Alan J. Weissberger, August 1981, p. 79. The protocol-converting X.25 multiplexer provides users with several cost-saving benefits.

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Glasgal Communications Services Inc
Harrington Park, NJ
Indiana Bell Telephone Co.
Indianapolis, IN
Innovative Electronics Inc
Miami Lakes, FL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Mepcom International
Dallas, TX
Micom-Borer Ltd
Reading, Berks R920JT,
England
Modems Plus Inc
Decatur, GA
Paradyne Corp
Largo, FL
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Quad Systems Inc
Gaithersburg, MD

Qytel
New York, NY
Ramcom Systems
Los Angeles, CA
RCA Global Communications Inc
New York, NY
Rixon Inc
Silver Spring, MD
Sytek Inc
Sunnyvale, CA
United Data Services Co Inc
Phoenix, AZ
Via West Inc
Rio Rico, AZ
Western Telematic Inc
Santa Ana, CA

MESSAGE SWITCHERS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
CYLIX COMMUNICATIONS NETWORK
Memphis, TN . . . . . ADV PG 19
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
Anderson Jacobson, Inc
San Jose, CA
Applied Systems Corp
St Claire Shores, MI
BBN Information Mgmt Corp
Cambridge, MA
Boston Financial & Equity Corp
Boston, MA
Burroughs Corp
Detroit, MI
C&W Incotel Ltd
New York, NY
Cable & Wireless NY Inc
New York, NY
Cado Systems Corp
Torrance, CA
Canadian Marconi
Montreal, Quebec,
Canada
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Commtex Inc
Crofton, MD
Compression Labs Inc
San Jose, CA
Computer Communications Inc
Torrance, CA
Computer Projects Inc
Greensboro, NC
Cylix Communications Network
Memphis, TN
DCD Telecommunications
Mansfield, MA
DDP Systems Inc
NY, NY
Digital Communications Corp
A M/A-COM Co
Germantown, MD
DP Communications
NY, NY
ENA Datasystems Inc
Rexdale, ON
Canada
Engineered Systems Inc
Omaha, NE
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
General Automation
Anaheim, CA
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Gould Modicon Div
Andover, MA
GTE Telenet Communications Corp
Vienna, VA
Hitachi America Ltd
Doraville, GA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
Industrial Computer Controls Inc
Cambridge, MA
Intersil Systems Div
Sunnyvale, CA
Kaufman Research Mfg Inc
Mountain View, CA
Mepcom International
Dallas, TX
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Periphonics Corp
Bohemia, NY
Perkin-Elmer
Oceanport, NJ
Perle Systems Ltd
Scarborough, ON
Canada
Pro-Log Corporation
Monterrey, CA
Prompt Communication Corp
Westlake Village, CA
Ramcom Systems
Los Angeles, CA
RCA Global Communications Inc
New York, NY
Silicon Systems Inc
Tustin, CA
Singer Co
Librascope Div
Glendale, CA
Sykes Datatronics
Rochester, NY
Syscom Inc
Sunnyvale, CA
Systar Corporation
San Jose, CA
Tandem Computers
Cupertino, CA
TMI Systems Corporation
Lexington, MA
TRT Telecommunications Corp
Washington, DC
The TRW-Fujitsu Co
Los Angeles, CA
Tymnet Inc
Cupertino, CA
Winterhalter & Associates, Inc
Dexter, MI

MODEM SHARING UNITS

ARK ELECTRONIC PRODUCTS
Melbourne, FL . . . . . ADV PG 60
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPRE COMM INC
Champaign, IL . . . . . ADV PG 40
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
INTERTEL INC
Andover, MA . . . . . ADV PG 80
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4

Applied Delta Systems Inc
Bellmawr, NJ
ARK Electronic Products
Melbourne, FL
Avanti Communications Corp
Newport, RI
Backus Data Systems Inc
San Jose, CA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Compre Comm Inc
Champaign, IL
Compumart
Cambridge, MA
Control Concepts
Div of Presearch Inc
Arlington, VA
Craig Data Cable Co, Inc
Stamford, CT
CSS Telecommunications
Mountain View, CA
DataStream Communications Inc
Santa Clara, CA
Data Switch Corporation
Norwalk, CT
Develcon Electronics Inc
Doylestown, PA
Digilog Inc
Horsham, PA
DMC Systems Inc
Santa Clara, CA
DP Communications
NY, NY
Electrodata Inc
Bedford Heights, OH
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Hawaiian Telephone Co
Honolulu, HI
Honeywell Information Systems
Waltham, MA
Innovative Electronics Inc
Miami Lakes, FL
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kapusi Laboratories
San Mateo, CA

Kaufman Research Mfg Inc
Mountain View, CA
Leasametric
Foster City, CA
Local Data
Torrance, CA
Mepcom International
Dallas, TX
Micom-Borer Ltd
Reading, Berks R920JT,
England
Modems Plus Inc
Decatur, GA
MTI Sales Corp
Great Neck, NY
National Data Corp
Atlanta, GA
NCR Comten Inc
St Paul, MN
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
PolyMorphic Systems
Santa Barbara, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Remark International
Woodbury, NY
Rixon Inc
Silver Spring, MD
Silicon Systems Inc
Tustin, CA
Sperry Univac
Blue Bell, PA
TeleProcessing Products Inc
Simi Valley, CA
Tel-Tex Inc
Houston, TX
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
United Data Services Co Inc
Phoenix, AZ
Universal Data Systems Inc
Huntsville, AL
Versitron Inc
Washington, DC
Via West Inc
Rio Rico, AZ
Western Telematic Inc
Santa Ana, CA

MULTIPLEXERS, FREQUENCY DIVISION

ARK ELECTRONIC PRODUCTS
Melbourne, FL . . . . . ADV PG 60
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
ARK Electronic Products
Melbourne, FL
Boston Financial & Equity Corp
Boston, MA
Chess
Denver, CO
Coherent Communications Systems Corp
Hauppauge, NY
ComData Corp
Morton Grove, IL
Compumart
Cambridge, MA
Datacomm Management Sciences Inc
. East Norwalk, CT
Data Control Systems
Div of General Indicator Corp
Danbury, CT
ENA Datasystems Inc
Rexdale, ON
Canada
E-Systems Inc
ECI Div
St Petersburg, FL
Frederick Electronics Corp
Frederick, MD
General DataComm Ind Inc
Danbury, CT
Glasgal Communications Services Inc
Harrington Park, NJ
Granger Associates
Santa Clara, CA
GTE Fiber Optics Comms Div
Mountain View, CA
GTE Lenkurt Inc
San Carlos, CA
Harris Corp, Farinon Transmission
Systems Div
San Carlos, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
MTI Sales Corp
Great Neck, NY
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
RFL Industries Inc
Boonton, NJ
South Central Bell Telephone Co
Birmingham, AL
Sytek Inc
Sunnyvale, CA
Tele-Signal Corp
Hauppauge, NY
Timeplex Inc
Rochelle Park, NJ
Tricom Inc
Frederick, MD
Wang Laboratories Inc
Lowell, MA
Western Multiplex Corp
San Carlos, CA

MULTIPLEXERS, TIME DIVISION

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPRE COMM INC
Champaign, IL . . . . . ADV PG 40
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
American Multiplex Systems
Fullerton, CA
Applied Delta Systems Inc
Bellmawr, NJ
Boston Financial & Equity Corp
Boston, MA
Canoga Data Systems
Canoga Park, CA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Compre Comm Inc
Champaign, IL
Compumart
Cambridge, MA
Computrol Corp
Ridgefield, CT
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
East Norwalk, CT
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Dataproducts of New England
Wallingford, CT
Digital Communications Corp
A M/A-COM Co
Germantown, MD
Dynatech Packet Technology
Springfield, VA
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Fibronics Ltd
Haifa 31905,
Frederick Electronics Corp
Frederick, MD
Gandalf Data Inc
Wheeling, IL
General Automation
Anaheim, CA
General DataComm Ind Inc
Danbury, CT
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
Granger Associates
Santa Clara, CA
GTE Fiber Optics Comms Div
Mountain View, CA
Halcyon
San Jose, CA
Harris Corp, Controls Div
Melbourne, FL
Harris Corp, Farinon Transmission
San Carlos, CA
Hawaiian Telephone Co
Honolulu, HI
Infolink Corp
North Brook, IL
Infotron Systems Corporation
Cherry Hill, NJ
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA

For further catalog information, turn to **UpDate Service Card, page 201.**

Loral Microwave Communications
San Diego, CA
Mepcom International
Dallas, TX
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
Optelecom Inc
Gaithersburg, MD
Paradyne Corp
Largo, FL
Qytel
New York, NY
Ramcom Systems
Los Angeles, CA
Rixon Inc
Silver Spring, MD
South Central Bell Telephone Co
Birmingham, AL
Stanford Telecommunications Inc
Sunnyvale, CA
Sytek Inc
Sunnyvale, CA
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
TRW Vidar
Sunnyvale, CA
Valtec Corp
West Boylston, MA
Versitron Inc
Washington, DC

INVERSE MULTIPLEXERS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
CHI Corp
Cleveland, OH
Codex Corporation
Mansfield, MA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Glasgal Communications Services Inc
Harrington Park, NJ
Innovative Electronics Inc
Miami Lakes, FL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Micom Systems Inc
Chatsworth, CA
Paradyne Corp
Largo, FL
Qytel
New York, NY
Timeplex Inc
Rochelle Park, NJ
Via West Inc
Rio Rico, AZ

MULTIPLEXERS, STATISTICAL (INTELLIGENT)

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMDESIGN INC
Goleta, CA . . . . . ADV PGS 32-33
COMPRE COMM INC
Champaign, IL . . . . . ADV PG 40
DIGITAL COMMUNICATIONS ASSOC INC
Norcross, GA . . . . . ADV PG 34
DIGITAL COMMUNICATIONS CORP A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
MOTOROLA GOV'T ELECTRONICS DIV
Scottsdale, AZ . . . . . ADV PG 67
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TECHNICAL ANALYSIS CORP
Atlanta, GA . . . . . ADV PG 38
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2

Alanthus Data Communications Corp
Rockville, MD
Applied Delta Systems Inc
Bellmawr, NJ
Applied Systems Corp
St Claire Shores, MI
Ardent Computer Products
Dobbs Ferry, NY
Boston Financial & Equity Corp
Boston, MA
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
ComDesign Inc
Goleta, CA
Commtex Inc
Crofton, MD
Compre Comm Inc
Champaign, IL
Computer Datacom Inc
Irvine, CA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
DCD Telecommunications
Mansfield, MA
Digital Communications Assoc Inc
Norcross, GA
Digital Communications Corp
A M/A-COM Co
Germantown, MD
Digital Systems Corp
Walkersville, MD
Dynatech Packet Technology
Springfield, VA
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Telenet Communications Corp
Vienna, VA
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Hydril Co
Control Systems Div
Houston, TX
IDE Corp
Cleveland, OH
Infotron Systems Corporation
Cherry Hill, NJ
Intersil Systems Div
Sunnyvale, CA
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
Modems Plus Inc
Decatur, GA
Motorola Gov't Electronics Div
Scottsdale, AZ
NCR Comten Inc
St Paul, MN
Nolton Communications
Cheshunt, Herts
England
Paradyne Corp
Largo, FL
Perkin-Elmer
Oceanport, NJ
Phone 1 Inc
Loves Park, IL
Point-4 Data Corp
Irvine, CA
Prentice Corp
Sunnyvale, CA
Quad Systems Inc
Gaithersburg, MD
Qytel
New York, NY
Racal-Milgo
Miami, FL
Rixon Inc
Silver Spring, MD
Southern Telephone Supply
Atlanta, GA
Technical Analysis Corp
Atlanta, GA

Teltone Corp
Kirkland, WA
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
Winterhalter & Associates, Inc
Dexter, MI

MULTIPLEXERS, GROUP BAND

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
Ames Colorfile Corp
Div Ames Safety Envelope Company
Somerville, MA
Boston Financial & Equity Corp
Boston, MA
C&W Incotel Ltd
New York, NY
Codex Corporation
Mansfield, MA
Concord Data Systems
Lexington, MA
Data Control Systems
Div of General Indicator Corp
Danbury, CT
ENA Datasystems Inc
Rexdale, ON Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Esterline Angus Instrument Corp
Indianapolis, IN
General DataComm Ind Inc
Danbury, CT
Glasgal Communications Services Inc
Harrington Park, NJ
Granger Associates
Santa Clara, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Micom Systems Inc
Chatsworth, CA
National Data Corp
Atlanta, GA
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
Tricom Inc
Frederick, MD
Western Multiplex Corp
San Carlos, CA

PACKET PROCESSORS

ASSOCIATED COMPUTER CONSULTANTS
Santa Barbara, CA . . . . . ADV PG 97
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMDESIGN INC
Goleta, CA . . . . . ADV PGS 32-33
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
ASI Teleprocessing
Watertown, MA
Associated Computer Consultants
Santa Barbara, CA
The Braegen Corp
Cupertino, CA
Channel Systems International
Santa Barbara, CA
Chess
Denver, CO
CHI Corp
Cleveland, OH
Codex Corporation
Mansfield, MA
ComDesign Inc
Goleta, CA
Computer Communications Inc
Torrance, CA
Computer Projects Inc
Greensboro, NC
DCD Telecommunications
Mansfield, MA
Digital Communications Corp
A M/A-COM Co
Germantown, MD
Dynatech Packet Technology
Springfield, VA
ENA Datasystems Inc
Rexdale, ON Canada
Engineered Systems Inc
Omaha, NE
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
ECI Div
St Petersburg, FL
Gandalf Data Inc
Wheeling, IL
GTE Telenet Communications Corp
Vienna, VA
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hitachi America Ltd
Doraville, GA
Honeywell Information Systems
Waltham, MA
Intersil Systems Div
Sunnyvale, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Kaufman Research Mfg Inc
Mountain View, CA
Lemcom Systems Inc
Phoenix, AZ
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Magnuson Systems Corp
San Jose, CA
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc Business
Communications Systems
Richardson, TX
Perkin-Elmer
Oceanport, NJ
Quad Systems Inc
Gaithersburg, MD
Sesa—Honeywell Communications, Inc
Herndor, VA
Systar Corporation
San Jose, CA
Sytek Inc
Sunnyvale, CA
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
Tymnet Inc
Cupertino, CA
Zitel Corp
San Jose, CA

PORT SELECTORS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DIGITAL COMMUNICATIONS ASSOC INC
Norcross, GA . . . . . ADV PG 34
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Craig Data Cable Co, Inc
Stamford, CT
Data Switch Corporation
Norwalk, CT
DCD Telecommunications
Mansfield, MA
Develcon Electronics Inc
Doylestown, PA
Digital Communications Assoc Inc
Norcross, GA
Digital Communications Corp
A M/A-COM Co
Germantown, MD
ENA Datasystems Inc
Rexdale, ON Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Infotron Systems Corporation
Cherry Hill, NJ
Innovative Electronics Inc
Miami Lakes, FL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Mepcom International
Dallas, TX
Micom Systems Inc
Chatsworth, CA
Qytel
New York, NY
Remark International
Woodbury, NY
Sytek Inc
Sunnyvale, CA

TeleProcessing Products Inc
Simi Valley, CA
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
Via West Inc
Rio Rico, AZ
Western Telematic Inc
Santa Ana, CA

PORT SHARING UNITS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
INTERTEL INC
Andover, MA . . . . . ADV PG 80
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
TECHNICAL ANALYSIS CORP
Atlanta, GA . . . . . ADV PG 38
Backus Data Systems Inc
San Jose, CA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Craig Data Cable Co, Inc
Stamford, CT
Data Plus Inc
Lorton, VA
Develcon Electronics Inc
Doylestown, PA
Electrodata Inc
Bedford Heights, OH
ENA Datasystems Inc
Rexdale, ON Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Hawaiian Telephone Co
Honolulu, HI
Inmac
Santa Clara, CA
Innovative Electronics Inc
Miami Lakes, FL
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kaufman Research Mfg Inc
Mountain View, CA
Lemcom Systems Inc
Phoenix, AZ
Local Data
Torrance, CA
Mepcom International
Dallas, TX
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Paradyne Corp
Largo, FL
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Qytel
New York, NY
Ramcom Systems
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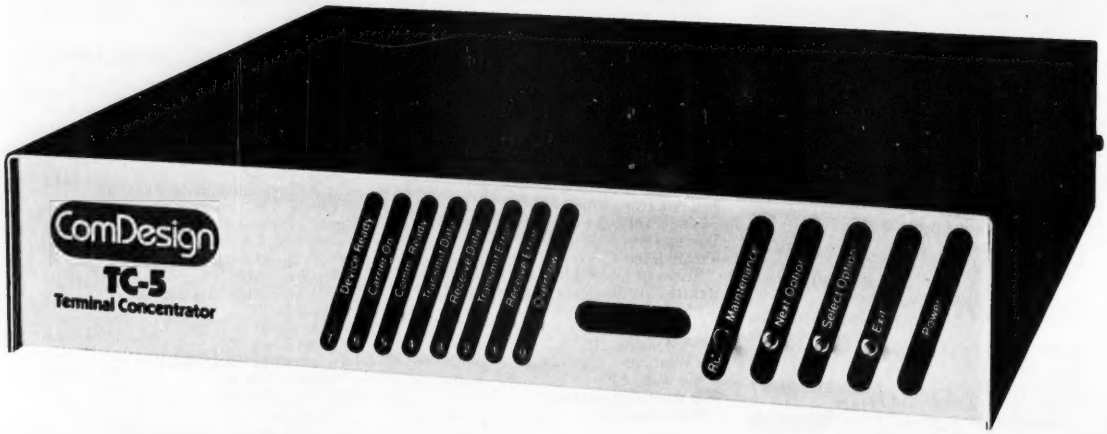
TC-5 Statistical Multiplexer

The advanced, easy to use statistical multiplexer for up to 16 asynchronous terminals, over a single telephone line



Outstanding Features

- **Increases throughput up to 400%.** Save over 90% on data comm costs.
- **Fast and easy front panel programming, with built-in alphanumeric screen.** No internal dip switches. No terminal needed to configure parameters.
- **Completely transparent.** No hardware or software changes required.
- **Over 10 billion different configurations per port.** Independently set all port parameters, from either unit, while other ports are active!
- **Models available with 4, 8, 12, and 16 ports.**
- **Eliminates all data errors.** Fully automatic error detection and retransmission.
- **Industry-wide compatibility, using RS-232-C interface.**
- **High reliability.** Automatic self tests, comprehensive diagnostics and link loopback tests. Link error statistics and percentage error rates.
- **Total system monitoring.** For each port, real time signal and data displays, individual error statistics and activity monitors.
- **Fully supports dial-up modems.** Also ECHOPLEX, autobaud and flow control (XON/XOFF, CTS, DSR/DTR).
- **Synchronous or asynchronous communications links.** 100% efficiency up to 9600 bps.
- **Automatic restart after power failure.**
- **Alarm messages.** Link down, lost data messages appear on terminal screen.
- **Terminal activated diagnostics.** Local and remote loopback, and pattern tests.
- **Current loop and 32K byte buffer options.**
- **Automatic downline load, with non-volatile store.**

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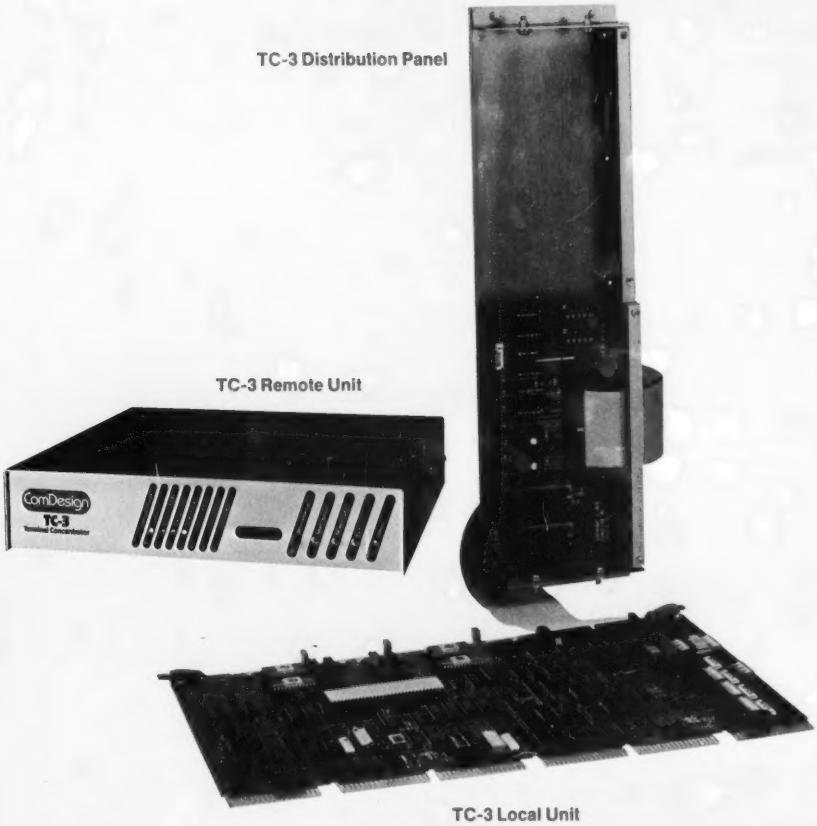
TC-3 Statistical Multiplexer

A statistical multiplexer for *PDP-11* and *VAX* users*



TC-3 Distribution Panel

TC-3 Remote Unit

TC-3 Local Unit

Features

- **Statistical multiplexing efficiencies up to 400%.** Reduces your data comm gear by up to 75%.
- **Cost savings of 25% over conventional statistical multiplexing, to 90% over multiple phone lines.** Eliminates DZ-11's and cables.
- **Error correction.** Data is checked and all errors eliminated automatically.
- **Data compression.** Blanks, new lines and repeat characters condensed to improve throughput.
- **Fast echo response.** Proprietary technique and parallel circuitry combine to minimize echo response time.
- **Comprehensive diagnostics.** Modem loopback, unit self-tests, and terminal diagnostics.
- **Built-in system monitors.** Real time data and signal displays, without interrupting system performance.
- **Automatic down-line load** of all port parameters to the TC-3 remote unit.
- **Full system transparency.** No hardware or software changes required.

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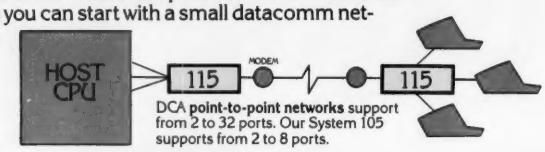
FROM STATISTICAL MULTIPLEXORS TO COMPLETE DATACOMM NETWORKS, EVERY DCA COMPONENT IS

ENGINEERED TO EXPAND

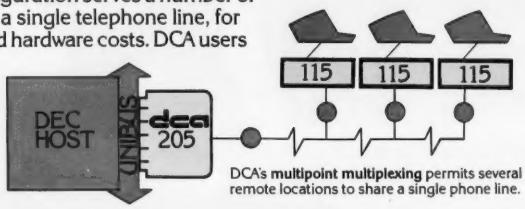
DCA protects your initial investment in statistical multiplexors with the lowest-cost network growth in the industry. So you can start with a small datacomm network today, and expand or modify it to meet your needs tomorrow.



DCA **point-to-point networks** support from 2 to 32 ports. Our System 105 supports from 2 to 8 ports.

Our System 115 statistical multiplexor can be used in point-to-point networks to support from 2 to 32 asynchronous terminals at a remote site. DCA's statistical multiplexing assures excellent response time, character transparency and error-free transmission.

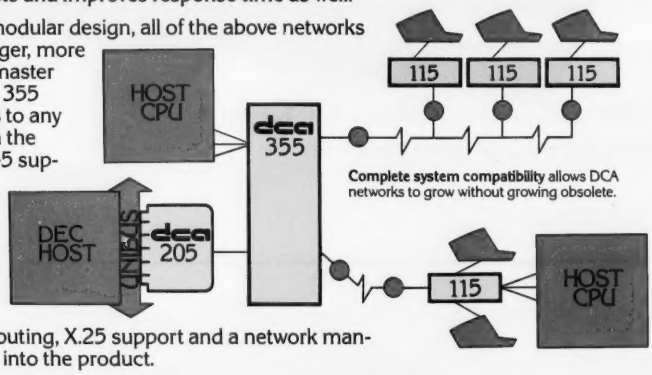
DCA's multipoint multiplexing configuration serves a number of remote terminal locations with just a single telephone line, for substantial savings in phone-line and hardware costs. DCA users have benefited from multipoint multiplexing since January 1979.



DCA's **multipoint multiplexing** permits several remote locations to share a single phone line.

DCA's System 205 is a statistical multiplexor designed for DEC UNIBUS*-based computers. The 205 requires only one UNIBUS slot to emulate up to 16 DEC DZ11 modules and a 128-port stat mux. This greatly lowers hardware costs and improves response time as well.

Because of DCA's unique modular design, all of the above networks could easily expand into larger, more powerful networks. As the master network processor, System 355 gives terminal users access to any host computer anywhere in the network. In addition, the 355 supports up to 126 ports, 44 of which can be high-speed synchronous trunk links. Several 355's can be combined to greatly expand this support. Features include port contention, switching, unlimited routing, X.25 support and a network management system built right into the product.



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"I was already aware of Halcyon's reputation for building reliable, rugged test equipment . . . and their 4200 statistical multiplexer is no exception. But what's really impressed me is the way their service people react to emergencies.

"In recent months, for example, we've had two systems from other manufacturers go down, and both times Halcyon's response has been 'extraordinary.' In one case, Halcyon delivered, tested and installed a new 4200 in only 23 hours. No other manufacturer would do that for me.

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"On top of that, the 4200 is a lot easier to use than other MUX's, and gives us everything we need . . . including line cost savings, flexibility, performance monitoring, network control, diagnostics, growth capability and more.

"In fact, I plan to purchase additional 4200's for our expanding remote sites. Halcyon's proven that they're committed to providing the best service around. And that means a lot to a 'back-up oriented' company like Apple."

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The Burroughs Remote Interface Terminal Emulator. The BRITE ONE. A new, compactly designed ASCII protocol converter that's specifically compatible with Burroughs protocol and adaptable to most other mainframes.

The microprocessor-based BRITE ONE interfaces with any ASCII remote RS232 device. Its 5x9 inch PC card fits inside existing terminals or its own stand-alone box. All user selected switches are external and easily accessible. Five front panel LEDs indicate power, transmit and receive data conditions plus ARQ retransmissions in either direction.

This exceptionally versatile translator provides line by line text editing and these other advantages—

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- Operates with dial-up modems
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Best of all, the BRITE ONE is inexpensive and cost effective.

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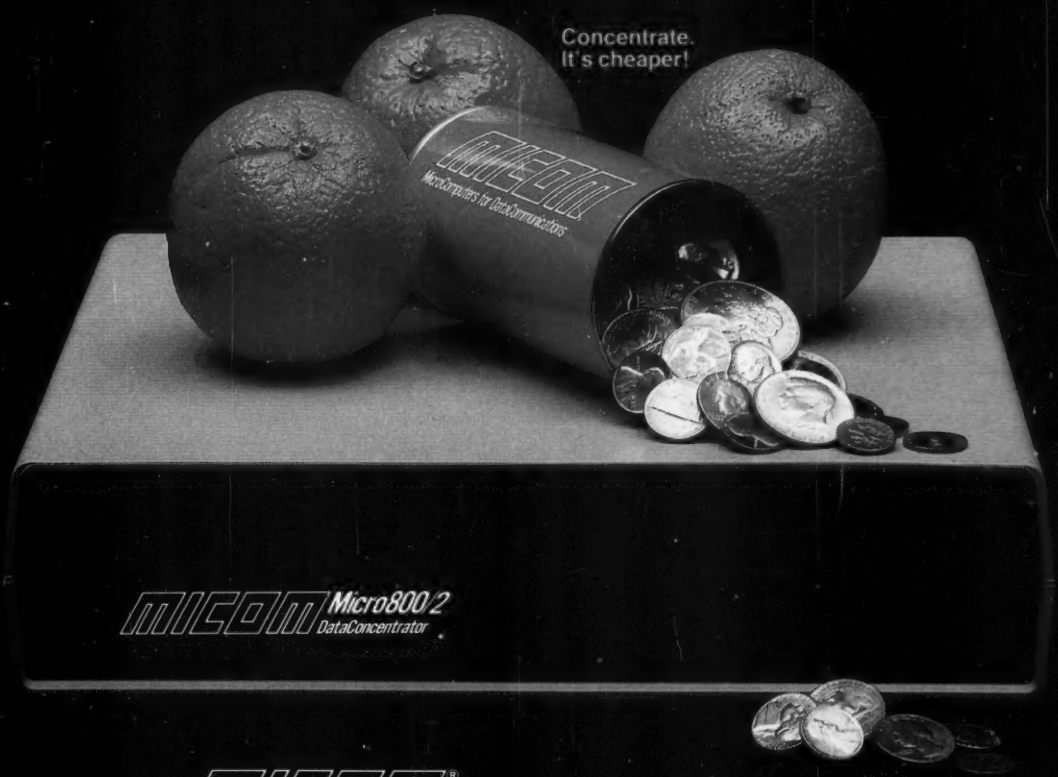
Why not learn what the new standard in data concentrators can save you? Typical prices are only $1400 for a 4-channel No-Frills™ model and $1850 for a 4-channel unit with Command Port. Call or send for our free 12-page booklet describing the Micro800/2 and its applications.



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This way, you can increase through-put at each terminal and gain more efficient user/computer interaction.

And you can match Data Express mux's with Compre Comm's LH-96 long-haul modems—so you can be sure of mux and modem compatibility . . . and of single-source service responsibility.

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Check out the Compre Comm line. It saves time on-line.

the Compre Comm line

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Data Express DE-8	8-channel statistical multiplexer for highly interactive full duplex async terminal operation, on a single phone line.	$2400*
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LH-96	Long-haul, V.29-compatible modem with CMOS-LSI implementation for high performance in full duplex point-to-point applications. 24/48/96 kbit/s.	$3000*
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MM-4	Modem sharing unit for up to 4 sync or async polled terminals up to 19.2 kbit/s. Can be concatenated for 4, 7, 10, etc. terminal interfaces.	$475
ME-2	Modem eliminator, sync or async, simulates work of 2 modems for in-house terminals or computers up to 19.2 kbit/s.	$400

*Rack mount extra

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Megamux is your answer to skyrocketing line rate costs. Interstate TELPAC service is gone. So now MEGAMUX can save you megabucks. You can't afford to be without it.

Multiplex these services simultaneously:
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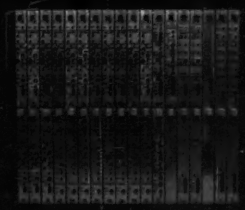

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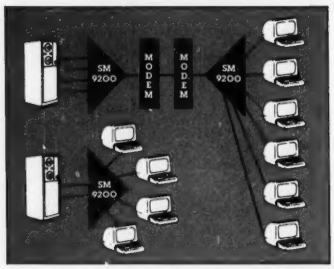
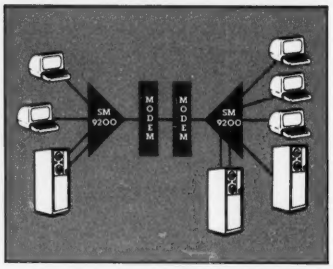
1. Port Contention



The Switch Mux allows a user to contend for any host port in either the local or remote location. Rotary group selection, speed conversion and unbalanced configurations are also standard. Costs savings are realized by reducing the number of computer ports and the size of the multiplexer configuration.

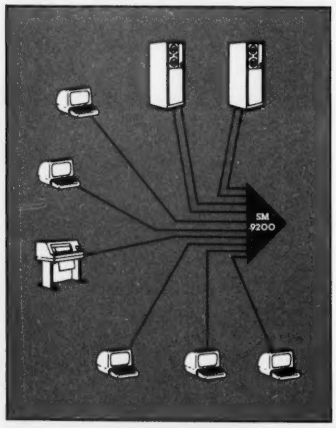
2. Port Selection

You can connect any terminal to any computer or terminal locally within your facility, or remotely to any port within another facility.



Using the advantages of statistical multiplexing, these facilities can be located thousands of miles apart.

3. Data PABX



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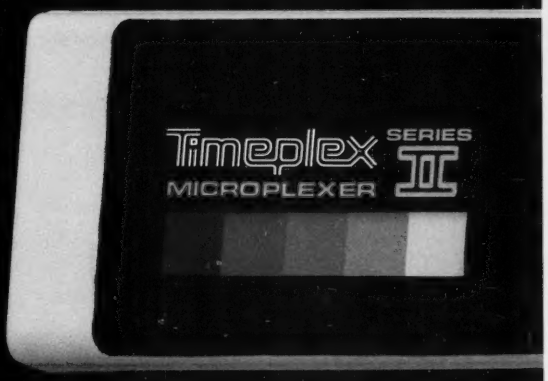

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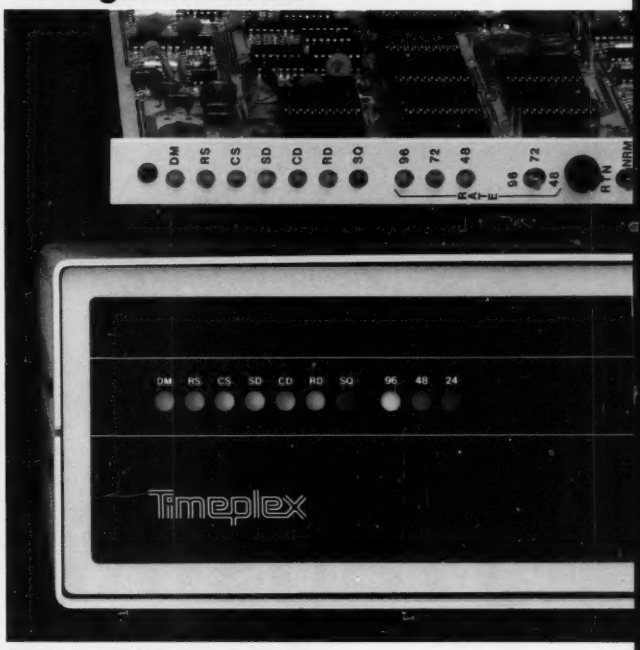

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Modem eliminators
Parallel line extenders

Data Transmission Equipment

Recent activity in the area of data transmission equipment seems to be focused on alternatives to digital data-hauling facilities, integration, and increased capacity and data speeds for conventional equipment. New products include a variety of lightwave-based components, local-networking schemes (including CATV, or broadband, products), and microwave/satellite connections. For conventional voice-grade phone lines, however, a number of high-capacity products have also been announced.

It had generally been held that 9.6 kbit/s was about the top-end data speed that could be pumped over a voice-grade phone line. This is not necessarily so, say Paradyne Corporation and England's Plessey Data Communications. Using a new bit-encoding technique called quadrature amplitude modulation (QAM), Paradyne designed its MP-14400, which, it purports, hauls up to 14.4 kbit/s over a conditioned voice-grade line. Similarly, Plessey maintains that its unit can achieve data transmission rates up to 16 kbit/s. And with the cost of Bell's leased-line facilities increasing, modems that provide greater capacity with the same facilities will likely proliferate in the near future.

Also, conventional digital/analog transmission gear continues to drop in price. This results from the keenly competitive market, along with improved manufacturing techniques and reduced component prices. For example, Micom announced this past year a two-port statistical multiplexer, the 822-NF, priced about $1,000. (A similar unit about three years ago would have been almost double that price.) The same is true for modems. A 1.2-kbit/s synchronous modem, announced recently by Intertel, costs $430 (perhaps a third of what it would have cost just a few years ago).

Although more appropriately termed data concentration equipment, multiplexing gear has shown a similar price/performance improvement. Statistical multiplexers supporting 32 or 48 devices are now common, and at least one new product, the 790 multiplexer from Infotron, reportedly supports up to 448 inputs. How-

Comparing lightwave equipment*

	CANOGA DATA SYSTEMS (CANOGA PARK, CALIF.)	VALTEC CORPORATION (WEST BOYLSTON, MASS.)	GANDALF DATA INC. (WHEELING, ILL.)
MANUFACTURER	CANOGA	FIBRONICS, DIGITAL COMMUNICATIONS CORPORATION	FIBRONICS
CABLE TYPE USED	GRADED INDEX (GLASS)	STEPPED OR GRADED INDEX (PLASTIC OR GLASS)	STEPPED INDEX (PLASTIC)
SYNCHRONOUS MODEM MODEL	CSY-100-S	SRSK-D1	FS-1
MAXIMUM CHANNEL RATE	56 KBIT/S	252 KBIT/S	252 KBIT/S
INTERFACE	RS-232-C	RS-232-C	RS-232-C
PRICE	$650 (STANDALONE) $475 (RACK-MOUNTED)	$725	$750
TRANSMISSION RANGE	TO 1 KILOMETER	TO 3 KILOMETERS (OPTIONAL)	TO 1 KILOMETER
MULTIPLEXER MODEL	CMX-100	LDM-9500	FX-8
TRAFFIC TYPE	SYNCHRONOUS AND ASYNCHRONOUS	SYNCHRONOUS AND ASYNCHRONOUS	ASYNCHRONOUS
NUMBER OF INPUTS	16	16	8
MAXIMUM RATE PER INPUT	56 KBIT/S	20 KBIT/S, ASYNC 64 KBIT/S, SYNC	20 KBIT/S
INTERFACE	RS-232-C	RS-232-C	RS-232-C
OPTIONS	RS-422 MIL 188 CCITT V.35	CCITT V.35 MIL 188	NONE
THROUGHPUT	2 MBIT/S, SYNC 5 MBIT/S, ASYNC	9.4 MBIT/S	240 KBIT/S
PRICE	$9,000	$7,000	$4,000
TRANSMISSION RANGE	TO 3 KILOMETERS	TO 2 KILOMETERS TO 3 KILOMETERS (OPTIONAL)	TO 1 KILOMETER

*THIS IS ONLY A REPRESENTATIVE COMPARISON, NOT AN EXHAUSTIVE LIST OF VENDORS IN THE LIGHTWAVE COMMUNICATIONS FIELD.

ever, these high-end figures assume that the devices are all low-speed and typically asynchronous. As the transmission speeds of the attached devices increase (and especially when a mixture of communications protocols are employed), the maximum number of supported devices decreases linearly.

Again, based on skyrocketing facilities cost, more and more users seek other means of transmission besides the Bell telephone network. And they are finding an increasing number of alternatives. For example, new vendors are joining the ranks of microwave-link suppliers all the time. General Electric recently came on board with a $4,000 microwave link that carries up to 9.6 kbit/s for a distance of up to 2 miles.

Similarly, Motorola Inc.'s division in Scottsdale, Ariz., now offers a satellite transmission station that carries multiple data streams over a single digital transmission at 1.544 Mbit/s. It seems that this data rate (1.544 Mbit/s) is fast becoming a standard in wideband transmission (for both microwave and satellite), as it is based on the Bell T1 carrier. And inasmuch as Bell is rapidly converting its trunks from analog to digital, the proliferation of wideband networks using a mixture of microwave, satellite, and Bell links (all based on the T1-carrier data rate) seems inevitable.

The number of vendors that have begun offering lightwave products lately indicates that this transmission medium, too, is quickly gaining commercial matu-

rity. Lightwave transmission was viewed originally as a black art by suppliers and users, but, in the last 36 months, over a dozen vendors have entered the field.

Lightwave alternatives

Although many of these suppliers offer only lightwave-based products, one longtime vendor of digital/analog communications gear—Gandalf Data Inc., of Wheeling, Ill.—has also gotten into the act. According to Gandalf, the lightwave offerings (two modems and a multiplexer) are made by Fibronics Ltd., of Haifa, Israel. (Fibronics has for several years been the source of many lightwave components sold in the U.S.) A favorable response to the lightwave equipment, the company says, might prompt Gandalf to begin producing its own components.

Valtec Corporation, of West Boylston, Mass., a leading vendor of lightwave equipment, also resold modems and multiplexers manufactured by Fibronics. Its LDM-9500 (a 16-port lightwave multiplexer), however, is manufactured by Digital Communications Corporation (DCC), which is owned by M/A-Com Inc., the company that also acquired Valtec.

Many, if not most, vendors now offer an RS-232-C interface to facilitate digital interconnection, and an increasing number are providing optional interfaces such as RS-422, Military Standard 188, and CCITT V.35. "Handling fiber-optic cable, and even attaching connectors to the cable end, is a procedure that anyone can learn in a matter of hours," says one vendor.

The connector is the cable terminus that interfaces with the light-emitting diode (LED) of the lightwave modem. Attaching the fiber to the connector is a simple procedure that involves heating the components, fastening them with epoxy glue, and then polishing the end-face with fine emery paper. Users generally do not have to worry about anything else, unless they are attempting to build fiber-optic links from a mixture of component suppliers' equipment.

There are two basic types of cable: stepped-index fiber, which is generally plastic-based, and graded-index fiber, usually made of fused silica (glass). Plastic cable is called stepped-index because, as a result of the manufacturing process, the refractive index of the fiber varies abruptly, in steps, depending on the distance from the center of the fiber.

Graded-index fiber has a more constant refractive index throughout the carrier fiber. This means that the glass fiber-optic cable has a generally higher bandwidth capacity and can carry data further than the plastic material.

Because of the high loss rate of the plastic fiber, its link distances (without repeaters) are seldom more than 325 feet. Glass fiber, on the other hand, can easily run over half of a mile without repeaters. Plastic cable, however, is easier to terminate with connectors.

Surprisingly, the difference in cost between the two is small. More importantly, the cost for fiber-optic cable is fast approaching that of conventional coaxial cable. The price per "channel-foot" (a foot of single-fiber cable) is about 30 cents, compared with about 25 cents per foot of coaxial. Frequently, multiple channels are included in the same cable to facilitate high-speed, full-duplex communications, and their cost is proportionately higher.

Modems and multiplexers

Inasmuch as fiber optics is a local, although high-bandwidth, medium, lightwave modems functionally replace limited-distance modems (LDMs), or short-haul modems, in local networks. Almost all lightwave modems and multiplexers that are commercially available today incorporate LEDs, although greater distances can be achieved with laser-based light sources and receivers.

Valtec is one manufacturer that offers its customers the option of incorporating laser light sources instead of LEDs. These customized assemblies typically cost about twice as much as their LED-based counterparts (see table). However, they do permit the link to be considerably longer (typically from about 0.5 mile to more than 1.5 miles).

Customers who plan to get their optical fiber from one source and their modems from another should be sure that the recommended wavelengths of the two are compatible. Many first-time users have had severe problems because they bought LED modems for short-wavelength light (800 to 900 nanometers), and then they used fiber designed to carry long-wavelength light (1,200 to 1,300).

Despite its current distance limitation, lightwave communications still offers unique transmission advantages. The medium is unaffected by electromagnetic interference, is extremely secure, has a much wider bandwidth than copper wire, and its price is dropping rapidly. Where cabling space is a problem, fiber-optic cable is clearly a plus. Coaxial cable is measured in quarters of an inch (diameter), while optical fiber is measured in hundreds of microns.

Integration

Another area of development for data transmission equipment has been the integration of voice and data over the same facilities. Invariably, the voice is digitized, but, in a digitized form, an extremely wide bandwidth is usually required (64 kbit/s is used by the phone company, but 32 kbit/s is considered typical). Therefore, to carry voice along with data, techniques such as compression (where characteristics of the voice signal are encoded) are employed.

In the past year, no fewer than a dozen transmission products have been announced to facilitate this integration. A data/voice processor from RFL Industries Inc., of Boonton, N.J., for example, permits a voice conversation to be carried, in digital form, along with a 1.2-kbit/s data stream over a voice-grade channel. The cost of each of these processors is $3,300. Other vendors prominent in the voice-digitization arena include Centigram Corporation, which encodes a voice conversation in 4.8 kbit/s; Time & Space Processing, with a 2.4-kbit/s voice digitizer costing $12,500; and Racal-Milgo, which has added 2.4-kbit/s voice-digitization capability to its line of statistical multiplexers. ■

For more on data transmission equipment, see the following DATA COMMUNICATIONS articles.

1. "Multiprotocol chip brings true flexibility," Pradip Madan and Javed Igbul, August 1981, p. 67. The additional capabilities afforded communications equipment with microprocessors is discussed.

2. "Lightwave is firm's link to greater productivity," Don Jacobs, June 1981, p. 107. One user's implementation of lightwave links is examined.

3. "Data network security: Everyone's problem," Hal Becker, September 1980, p. 60. This article addresses the security factor as it relates to data transmission equipment.

4. "A synchronous ticket to packet networks," Sheldon Fox, Anthony Lavia, and Kenichi Kawaguchi, August 1980, p. 113. The authors discuss how communications users can interface their data transmission equipment with public data networks.

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GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
HARBOR ELECTRONICS
Ridgefield, CT . . . . . ADV PG 153
Anaconda-Ericsson Information Systems
Woodbury, NY
W A Brown Instruments
Orlando, FL
Canoga Data Systems
Canoga Park, CA
Corning Glass Works
Telecommunications Prod Dept
Corning, NY
CSS Telecommunications
Mountain View, CA
DEI-Teleproducts
Escondido, CA
Fibronics Ltd
Haifa 31905,
Galileo Electro-Optics Corp
Sturbridge, MA
Gandalf Data Inc
Wheeling, IL
General Cable Co, a div of GK
Technologies
Greenwich, CT
General Optronics Corp
South Plainfield, NJ
GTE Fiber Optics Comms Div
Mountain View, CA
GTE Lenkurt Inc
San Carlos, CA
Harbor Electronics
Ridgefield, CT
Harris Digital Telephone Systems
Division
Novato, CA
Harris Corp, Farinon Transmission
Systems Div
San Carlos, CA
Hawaiian Telephone Co
Honolulu, HI

For further catalog information, turn to **UpDate Service Card, page 201.**

Hewlett-Packard Co
Palo Alto, CA
ITT-Electro/Optical
Roanoke, VA
Math Associates Inc
Port Washington, NY
Optelecom Inc
Gaithersburg, MD
Page Communications Engineers Inc
Vienna, VA
Poly-Optical Products Inc
Santa Ana, CA
Valtec Corp
West Boylston, MA
Versitron Inc
Washington, DC
Western Tele-Communications Inc
Denver, CO

LINE DRIVERS

ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
BO-SHERREL CO
Newark, CA . . . . . ADV PG 66
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
NORTHERN TELECOM INC SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
Applied Delta Systems Inc
Bellmawr, NJ
Astrocom Corp
St Paul, MN
Avanti Communications Corp
Newport, RI
Belden Corp
Geneva, IL
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Bootstrap Ltd
Sandycove, Dublin
Ireland
Bo-Sherrel Co
Newark, CA
Brain Power Incorporated
Miami, FL
W A Brown Instruments
Orlando, FL
Canoga Data Systems
Canoga Park, CA
Cermetek Microelectronics Inc
Sunnyvale, CA
Chess
Denver, CO
Cincinatti Electronics Corp
Cincinatti, OH
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA

Data Control Systems
Div of General Indicator Corp
Danbury, CT
Data Rentals/Sales Inc
Culver City, CA
Data Set Cable Co Inc
Ridgefield, CT
DCD Telecommunications
Mansfield, MA
DEI-Teleproducts
Escondido, CA
Digilog Inc
Horsham, PA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Fibronics Ltd
Haifa 31905,
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kapusi Laboratories
San Mateo, CA
Leasametric
Foster City, CA
Micom Systems Inc
Chatsworth, CA
Modular Computer Systems
Fort Lauderdale, FL
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Nu Data Corp
Little Silver, NJ
Prentice Corp
Sunnyvale, CA
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Qytel
New York, NY
Racon Inc
Seattle, WA
Remark International
Woodbury, NY
Telecommunications Techniques Corp
Gaithersburg, MD
Telenokia Oy
Espoo 60,
Finland
TeleProcessing Products Inc
Simi Valley, CA
Triton Engineering Inc
Gaithersburg, MD
United Data Services Co Inc
Phoenix, AZ
US Robotics Inc
Chicago, IL

Ven-Tel Inc
Santa Clara, CA
Versitron Inc
Washington, DC
Via West Inc
Rio Rico, AZ
The Widget Works
St Augustine, FL

MICROWAVE/LASER SYSTEMS

COMTECH DATA CORP
Tempe, AZ . . . . . ADV PG 62
Anaconda-Ericsson Information Systems
Woodbury, NY
Antenna For Communications
Ocala, FL
Automatic Control Systems Inc
An Affiliate of Qubit Corp
Macedonia, OH
Cincinatti Electronics Corp
Cincinatti, OH
Comtech Data Corp
Tempe, AZ
Control Laser Corp
Orlando, FL
EIP Microwave Inc
San Jose, CA
Granger Associates
Santa Clara, CA
Harris Corp, Farinon Transmission
Systems Div
San Carlos, CA
Hawaiian Telephone Co
Honolulu, HI
Loral Microwave
Communications—Terracom
San Diego, CA
Racon Inc
Seattle, WA
Singer Co
Librascope Div
Glendale, CA
Southern Pacific Communications Service
McLean, VA
Valtec Corp
West Boylston, MA
Western Multiplex Corp
San Carlos, CA

INFRARED SYSTEMS

American Laser Systems Inc
Goleta, CA
Automatic Control Systems Inc
An Affiliate of Qubit Corp
Macedonia, OH
Cincinatti Electronics Corp
Cincinatti, OH
Datapoint Corporation
San Antonio, TX
General Optronics Corp
South Plainfield, NJ
ITT-Electro/Optical
Roanoke, VA

FM SYSTEMS

Automatic Control Systems Inc
An Affiliate of Qubit Corp
Macedonia, OH
Cincinatti Electronics Corp
Cincinatti, OH
Coastcom
Concord, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Printer Terminal Communications Corp
Ramona, CA
Valtec Corp
West Boylston, MA

MODEMS, LIMITED DISTANCE

ARK ELECTRONIC PRODUCTS
Melbourne, FL . . . . . ADV PG 60
ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
BO-SHERREL CO
Newark, CA . . . . . ADV PG 66
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/
COMMUNICATION EQUIPMENT
LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2

Anderson Jacobson, Inc
San Jose, CA
ARK Electronic Products
Melbourne, FL
Astrocom Corp
St Paul, MN
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Bootstrap Ltd
Sandycove, Dublin
Ireland
Bo-Sherrel Co
Newark, CA
Boston Financial & Equity Corp
Boston, MA
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Cablebus Systems Corp
Beaverton, OR
Canoga Data Systems
Canoga Park, CA
Cermetek Microelectronics Inc
Sunnyvale, CA
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Computer Datacom Inc
Irvine, CA
Computrol Corp
Ridgefield, CT
Com/Tech Systems
New York, NY
Concord Data Systems
Lexington, MA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
East Norwalk, CT
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Data Set Cable Co Inc
Ridgefield, CT
DCD Telecommunications
Mansfield, MA
DEI-Teleproducts
Escondido, CA
Develcon Electronics Inc
Doylestown, PA
Digilog Inc
Horsham, PA
Dynatech Data Systems
Springfield, VA
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
E-Systems Inc
Garland Div
Garland, TX
Fibronics Ltd
Haifa 31905,
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
General Telephone Co of Wisconsin
Sun Prairie, WI
Glasgal Communications Services Inc
Harrington Park, NJ
Gould Modicon Div
Andover, MA
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Hewlett-Packard Co
Palo Alto, CA
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Kapusi Laboratories
San Mateo, CA

Kinex Corp
Largo, FL
Leasametric
Foster City, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Madzar Corp
Fremont, CA
Micom Systems Inc
Chatsworth, CA
Modtech Inc
Livermore, CA
MTI Sales Corp
Great Neck, NY
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Nuclear Engineering Services Co
Sunnyvale, CA
Nu Data Corp
Little Silver, NJ
Optelecom Inc
Gaithersburg, MD
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Periphonics Corp
Bohemia, NY
Precision Communications Services Inc
Tampa, FL
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Racon Inc
Seattle, WA
Remark International
Woodbury, NY
Rental Electronics Inc
Palo Alto, CA
Rixon Inc
Silver Spring, MD
South Central Bell Telephone Co
Birmingham, AL
Southern Telephone Supply
Atlanta, GA
Standard Engineering
Fremont, CA
Tek-Com
San Jose, CA
Telenokia Oy
Espoo 60,
Finland
Terminal Data Corp
Rockville, MD
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
US Robotics Inc
Chicago, IL
Ven-Tel Inc
Santa Clara, CA

Want to contact the company that makes it?
Turn to **Vendor Directory, page 301.**

MODEMS, MULTIPOINT

ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
RACAL-VADIC INC
Sunnyvale, CA . . . . . ADV PG 63
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4

Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Astrocom Corp
St Paul, MN
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Commtex Inc
Crofton, MD
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
Garland Div
Garland, TX
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
General Telephone Co of Wisconsin
Sun Prairie, WI
Glasgal Communications Services Inc
Harrington Park, NJ
Gould Modicon Div
Andover, MA
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Intertel Inc
Andover, MA
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Kinex Corp
Largo, FL
Leasametric
Foster City, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
Modtech Inc
Livermore, CA
Multi-Tech Systems Inc
New Brighton, MN
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Nuclear Engineering Services Co
Sunnyvale, CA
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Precision Communications Services Inc
Tampa, FL
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Racal-Vadic Inc
Sunnyvale, CA
Rental Electronics Inc
Palo Alto, CA
Rixon Inc
Silver Spring, MD
South Central Bell Telephone Co
Birmingham, AL
Sperry Univac
Blue Bell, PA
Standard Engineering
Fremont, CA
Tek-Com
San Jose, CA
Telenokia Oy
Espoo 60,
Finland
Timeplex Inc
Rochelle Park, NJ
Universal Data Systems Inc
Huntsville, AL
Ven-Tel Inc
Santa Clara, CA

MODEMS, MULTIPORT

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4

AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Computrol Corp
Ridgefield, CT
Continental Resources Inc
Bedford, MA
Datapoint Corporation
San Antonio, TX
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
E-Systems Inc
Garland Div
Garland, TX
Frederick Electronics Corp
Frederick, MD
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
Glasgal Communications Services Inc
Harrington Park, NJ
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Infolink Corp
North Brook, IL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Kinex Corp
Largo, FL
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
MTI Sales Corp
Great Neck, NY
Nolton Communications
Cheshunt, Herts
England
Nuclear Engineering Services Co
Sunnyvale, CA
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Qytel
New York, NY
Racal-Milgo
Miami, FL
Rental Electronics Inc
Palo Alto, CA
Rixon Inc
Silver Spring, MD
Sperry Univac
Blue Bell, PA
Standard Engineering
Fremont, CA
Tek-Com
San Jose, CA
Telenokia Oy
Espoo 60,
Finland
Timeplex Inc
Rochelle Park, NJ
Universal Data Systems Inc
Huntsville, AL

MODEMS, VOICE-GRADE, LOW-SPEED (0-1,200 B/S)

ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INTERTEL INC
Andover, MA . . . . . ADV PG 80
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
RACAL-VADIC INC
Sunnyvale, CA . . . . . ADV PG 63
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4

Advanced Micro Devices
Sunnyvale, CA
Alanthus Data Communications Corp
Rockville, MD
American Computer Group Inc
Boston, MA
American National Supply
Gardena, CA
American Terminal Leasing Co
Boston, MA
Anaconda-Ericsson Information Systems
Woodbury, NY
Anderson Jacobson, Inc
San Jose, CA
Astrocom Corp
St Paul, MN
AT&T
Morris Plains, NJ
Automated Equipment Inc
Fountain Valley, CA
Bizcomp Corporation
Menlo Park, CA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Bootstrap Ltd
Sandycove, Dublin
Ireland
Boston Financial & Equity Corp
Boston, MA
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Cablebus Systems Corp
Beaverton, OR
Carterfone Communications Corp
Dallas, TX
Cermetek Microelectronics Inc
Sunnyvale, CA
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Coastcom
Concord, CA
Codex Corporation
Mansfield, MA
Coherent Communications Systems Corp
Hauppauge, NY
ComData Corp
Morton Grove, IL
Compal Inc
Beverly Hills, CA
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Concord Data Systems
Lexington, MA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Data Access Systems Inc
Blackwood, NJ
Datacomm Management Sciences Inc
East Norwalk, CT
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Datapoint Corporation
San Antonio, TX
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Datec Inc
Carrboro, NC
Develcon Electronics Inc
Doylestown, PA
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
Envax Corporation
Irving, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, ON Canada
E-Systems Inc
ECI Div
St Petersburg, FL

E-Systems Inc
Garland Div
Garland, TX
Frederick Electronics Corp
Frederick, MD
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Lenkurt Inc
San Carlos, CA
Harris Corp
Controls Div
Melbourne, FL
Hawaiian Telephone Co
Honolulu, HI
Hayes Microcomputer Products Inc
Norcross, GA
Heath Co
Benton Harbor, MI
Hewlett-Packard Co
Palo Alto, CA
Hydril Co
Control Systems Div
Houston, TX
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Infolink Corp
North Brook, IL
Information Technology Inc
Needham, MA
Infotron Systems Corporation
Cherry Hill, NJ
Interface Technology Inc
St Louis, MO
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kinex Corp
Largo, FL
Leading Edge Inc.
Canton, MA
Leasametric
Foster City, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Mepcom International
Dallas, TX
Micom-Borer Ltd
Reading, Berks R920JT,
England
Modtech Inc
Livermore, CA
MTI Sales Corp
Great Neck, NY
Multi-Tech Systems Inc
New Brighton, MN
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Novation Inc
Tarzana, CA
Nuclear Engineering Services Co
Sunnyvale, CA
Nu Data Corp
Little Silver, NJ
Omnitec Data
Phoenix, AZ
Penril Corp
Data Communications Div
Rockville, MD
Periphonics Corp
Bohemia, NY
Plantronics/Santa Cruz
Santa Cruz, CA
Precision Communications Services Inc
Tampa, FL
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Racal-Vadic Inc
Sunnyvale, CA
Rental Electronics Inc
Palo Alto, CA
RFL Industries Inc
Boonton, NJ
Rixon Inc
Silver Spring, MD
Rockwell International Electronic
Devices Division
Anaheim, CA
Selecterm Inc
Wakefield, MA
South Central Bell Telephone Co
Birmingham, AL
Southern Telephone Supply
Atlanta, GA
Sperry Univac
Blue Bell, PA
Tek-Com
San Jose, CA
Telenokia Oy
Espoo 60,
Finland
Tele-Signal Corp
Hauppauge, NY
Tel-Tex Inc
Houston, TX
Teltone Corp
Kirkland, WA
Terminal Data Corp
Rockville, MD
Timeplex Inc
Rochelle Park, NJ
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
Trendata/Standard Memories
Santa Ana, CA
Ultramation
Syracuse, NY
Universal Data Systems Inc
Huntsville, AL
US Robotics Inc
Chicago, IL
Ven-Tel Inc
Santa Clara, CA
The Western Union Telegraph Co
Upper Saddle River, NJ

MODEMS, VOICE-GRADE, MEDIUM SPEED (1,800-3,600 B/S)

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/
COMMUNICATION EQUIPMENT
LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
RACAL-VADIC INC
Sunnyvale, CA . . . . . ADV PG 63
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4
Anaconda-Ericsson Information Systems
Woodbury, NY
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
Cablebus Systems Corp
Beaverton, OR
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Coastcom
Concord, CA
Codex Corporation
Mansfield, MA
Coherent Communications Systems Corp
Hauppauge, NY
ComData Corp
Morton Grove, IL
Compal Inc
Beverly Hills, CA
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Concord Data Systems
Lexington, MA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Data Dimensions Inc
Norwalk, CT
Datec Inc
Carrboro, NC
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
ECI Div
St Petersburg, FL
E-Systems Inc
Garland Div
Garland, TX
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY

General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Lenkurt Inc
San Carlos, CA
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Information Technology Inc
Needham, MA
Infotron Systems Corporation
Cherry Hill, NJ
Intertel Inc
Andover, MA
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
Kinex Corp
Largo, FL
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
MTI Sales Corp
Great Neck, NY
Multi-Tech Systems Inc
New Brighton, MN
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Nuclear Engineering Services Co
Sunnyvale, CA
Omnitec Data
Phoenix, AZ
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Precision Communications Services Inc
Tampa, FL
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Racal-Vadic Inc
Sunnyvale, CA
RFL Industries Inc
Boonton, NJ
Rixon Inc
Silver Spring, MD
Rockwell International Electronic
Devices Division
Anaheim, CA
South Central Bell Telephone Co
Birmingham, AL
Southern Telephone Supply
Atlanta, GA
Telenokia Oy
Espoo 60,
Finland
Tele-Signal Corp
Hauppauge, NY
Tel-Tex Inc
Houston, TX
Teltone Corp
Kirkland, WA
Timeplex Inc
Rochelle Park, NJ
Universal Data Systems Inc
Huntsville, AL
Ven-Tel Inc
Santa Clara, CA
The Western Union Telegraph Co
Upper Saddle River, NJ

MODEMS, VOICE-GRADE, HIGH-SPEED (4,800-9,600 B/S)

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPRE COMM INC
Champaign, IL . . . . . ADV PG 40
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
INFOTRON SYSTEMS CORPORATION
Cherry Hill, NJ . . . . . ADV PG 44
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4
Anaconda-Ericsson Information Systems
Woodbury, NY
Applied Delta Systems Inc
Bellmawr, NJ
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
Cablebus Systems Corp
Beaverton, OR
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Coastcom
Concord, CA
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Compal Inc
Beverly Hills, CA
Compre Comm Inc
Champaign, IL
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Data Dimensions Inc
Norwalk, CT
Electro Rent
Burbank, CA
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
ECI Div
St Petersburg, FL
E-Systems Inc
Garland Div
Garland, TX
Gandalf Data Inc
Wheeling, IL
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Company of Indiana Inc
Fort Wayne, IN
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Lenkurt Inc
San Carlos, CA
Halcyon
San Jose, CA
Hawaiian Telephone Co
Honolulu, HI
Hycom Inc
Irvine, CA
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Infotron Systems Corporation
Cherry Hill, NJ
Intertel Inc
Andover, MA
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
Kinex Corp
Largo, FL
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micom Systems Inc
Chatsworth, CA
MTI Sales Corp
Great Neck, NY
Nolton Communications
Cheshunt, Herts
England
Nuclear Engineering Services Co
Sunnyvale, CA
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Precision Communications Services Inc
Tampa, FL
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL

Rixon Inc
Silver Spring, MD
Rockwell International Electronic
Devices Division
Anaheim, CA
South Central Bell Telephone Co
Birmingham, AL
Southern Telephone Supply
Atlanta, GA
Sperry Univac
Blue Bell, PA
Telenokia Oy
Espoo 60,
Finland
Tel-Tex Inc
Houston, TX
Teltone Corp
Kirkland, WA
Timeplex Inc
Rochelle Park, NJ
Ultramation
Syracuse, NY
Universal Data Systems Inc
Huntsville, AL
The Western Union Telegraph Co
Upper Saddle River, NJ

MODEMS, BROADBAND, HALF-GROUP (TO 19.2 KB/S)

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
PRENTICE CORP
Sunnyvale, CA . . . . . ADV PG 61
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
W A Brown Instruments
Orlando, FL
Cablebus Systems Corp
Beaverton, OR
Canoga Data Systems
Canoga Park, CA
Cincinnati Bell
Cincinnati, OH
Coastcom
Concord, CA
Codex Corporation
Mansfield, MA
Data Control Systems
Div of General Indicator Corp
Danbury, CT
ENA Datasystems Inc
Rexdale, ON
Canada
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gandalf Data Inc
Wheeling, IL
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
Gould Modicon Div
Andover, MA
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Kinex Corp
Largo, FL
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Prentice Corp
Sunnyvale, CA
Qytel
New York, NY
Sytek Inc
Sunnyvale, CA
Telenokia Oy
Espoo 60,
Finland

MODEMS, BROADBAND GROUP (TO 50 KB/S)

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMTECH DATA CORP
Tempe, AZ . . . . . ADV PG 62
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
Canoga Data Systems
Canoga Park, CA
Cincinnati Bell
Cincinnati, OH
Coastcom
Concord, CA
Codex Corporation
Mansfield, MA
Comtech Data Corp
Tempe, AZ
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Digital Communications Corp
A M/A-COM Co
Germantown, MD
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Fibronics Ltd
Haifa 31905,
Gandalf Data Inc
Wheeling, IL
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Lenkurt Inc
San Carlos, CA
Hawaiian Telephone Co
Honolulu, HI
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
LNR Communications Inc
Hauppauge, NY
Nuclear Engineering Services Co
Sunnyvale, CA
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Qytel
New York, NY
Scientific-Atlanta Inc
Satcom Division
Atlanta, GA
Stanford Telecommunications Inc
Sunnyvale, CA
Sytek Inc
Sunnyvale, CA
Western Multiplex Corp
San Carlos, CA

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

MODEMS, BROADBAND, SUPER-GROUP (TO 230.4 KB/S)

COMTECH DATA CORP
Tempe, AZ . . . . . ADV PG 62
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
AT&T
Morris Plains, NJ
Avanti Communications Corp
Newport, RI
Canoga Data Systems
Canoga Park, CA
Coastcom
Concord, CA
Computrol Corp
Ridgefield, CT
Comtech Data Corp
Tempe, AZ
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Digital Communications Corp
A M/A-COM Co
Germantown, MD
Fibronics Ltd
Haifa 31905,
Gandalf Data Inc
Wheeling, IL
General Telephone Co of the Northwest
Everett, WA
Indiana Bell Telephone Co.
Indianapolis, IN
The David Jamison Carlyle Corp
Los Angeles, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Nuclear Engineering Services Co
Sunnyvale, CA
Optelecom Inc
Gaithersburg, MD
Penril Corp
Data Communications Div
Rockville, MD
Scientific-Atlanta Inc
Satcom Division
Atlanta, GA
Stanford Telecommunications Inc
Sunnyvale, CA
Sytek Inc
Sunnyvale, CA
Valtec Corp
West Boylston, MA
Western Multiplex Corp
San Carlos, CA

MODEM ELIMINATORS

ARK ELECTRONIC PRODUCTS
Melbourne, FL . . . . . ADV PG 60
ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
COMPRE COMM INC
Champaign, IL . . . . . ADV PG 40
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4
Applied Delta Systems Inc
Bellmawr, NJ
ARK Electronic Products
Melbourne, FL
Astrocom Corp
St Paul, MN
Avanti Communications Corp
Newport, RI
Belden Corp
Geneva, IL
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Brain Power Incorporated
Miami, FL
Canoga Data Systems
Canoga Park, CA
Chess
Denver, CO
Compre Comm Inc
Champaign, IL
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Com/Tech Systems
New York, NY
Control Concepts
Div of Presearch Inc
Arlington, VA
Craig Data Cable Co, Inc
Stamford, CT
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
East Norwalk, CT
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Dataprobe Inc
Palisades Park, NJ
Data Set Cable Co Inc
Ridgefield, CT
DCD Telecommunications
Mansfield, MA
DEI-Teleproducts
Escondido, CA
Develcon Electronics Inc
Doylestown, PA
Digilog Inc
Horsham, PA
Dynatech Data Systems
Springfield, VA
Electrodata Inc
Bedford Heights, OH
Fibronics Ltd
Haifa 31905,
Gandalf Data Inc
Wheeling, IL
General Telephone Co of Kentucky
Lexington, KY
Glasgal Communications Services Inc
Harrington Park, NJ
Honeywell Information Systems
Waltham, MA
IDE Corp
Cleveland, OH
Infolink Corp
North Brook, IL
International Data Sciences Inc
Lincoln, RI
The David Jamison Carlyle Corp
Los Angeles, CA
Leasametric
Foster City, CA
Micom Systems Inc
Chatsworth, CA
Modtech Inc
Livermore, CA
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Penril Corp
Data Communications Div
Rockville, MD
Periphonics Corp
Bohemia, NY
Perle Systems Ltd
Scarborough, ON
Canada
Racon Inc
Seattle, WA
Remark International
Woodbury, NY
Sperry Univac, MCO
Irvine, CA
TeleProcessing Products Inc
Simi Valley, CA
Terminal Data Corp
Rockville, MD
United Data Services Co Inc
Phoenix, AZ
Universal Data Systems Inc
Huntsville, AL
Valtec Corp
West Boylston, MA
Ven-Tel Inc
Santa Clara, CA
Versitron Inc
Washington, DC
Vertex Electronics Inc
Farmingdale, NY
The Widget Works
St Augustine, FL

MIL 188C ADAPTERS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Applied Delta Systems Inc
Bellmawr, NJ
Canoga Data Systems
Canoga Park, CA
Codex Corporation
Mansfield, MA
Dataproducts of New England
Wallingford, CT
DCD Telecommunications
Mansfield, MA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
GTE Lenkurt Inc
San Carlos, CA
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
NCR Comten Inc
St Paul, MN
Paradyne Corp
Largo, FL
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Racal-Milgo
Miami, FL
Telecommunications Techniques Corp
Gaithersburg, MD
Tele-Signal Corp
Hauppauge, NY
Versitron Inc
Washington, DC
The Widget Works
St Augustine, FL

PARALLEL LINE EXTENDERS

LOCAL DATA
Torrance, CA . . . . . ADV PG 156
Belden Corp
Geneva, IL
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Canoga Data Systems
Canoga Park, CA
Compression Labs Inc
San Jose, CA
Local Data
Torrance, CA
Optelecom Inc
Gaithersburg, MD
TeleProcessing Products Inc
Simi Valley, CA

Need to transmit data just a few miles? Our Local Datasets do more for less.

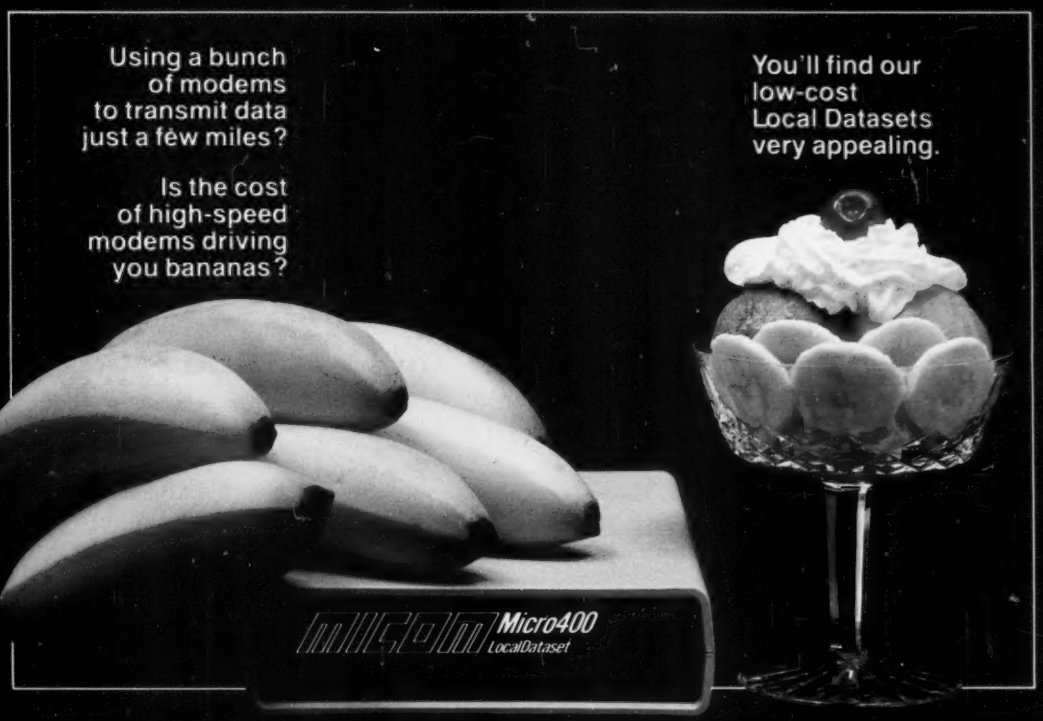
If you're using a bunch of high-speed modems for short-range data transmission, you don't need us to tell you they are *very* expensive. They have to be if they are designed for transmission over *any* distance. But, if you only need to transmit data a few miles, you'll find our Micro400 Local Dataset family very appealing. And since they operate at any speed to 19200 bps for the same low price, they let you operate faster too.

The Micro400 family is a series of specialized modems, designed by MICOM specially for *short-range* data transmission and thereby offering substantial cost savings because of their reduced complexity. The Micro400 family includes both *Line Drivers*, designed for use in-house over twisted pair cable, and *Local Datasets*, designed for use over telephone company private line metallic circuits. Asynchronous and synchronous versions of both are provided, and our Local Datasets meet the requirements of Bell Publication 43401.

All Micro400 models are offered either in a small table-top enclosure or in a compact rack-mount chassis which holds 16 units and takes up only 5¼" of height in your 19" wide computer cabinet. The table-top unit weighs only 2 pounds.

The small size and light weight minimize logistics problems and simplify installation and replacement in the field. Like MICOM's other products, the Micro400 is designed for *do-it-yourself installation*. No special tools are required.

Prices start at under $200, with substantial OEM and quantity discounts available, so send for complete details today ... better still, why not call and order a pair on a 30-day sale-or-return basis? No strings attached! We *know* you'll love it.



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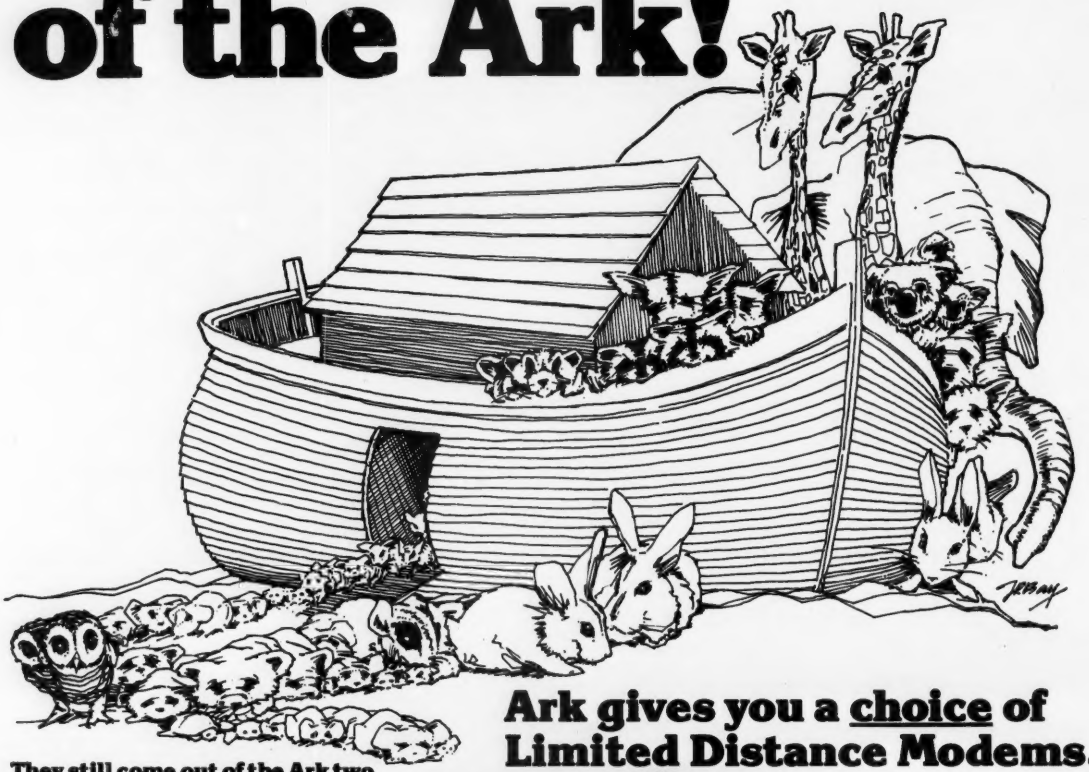
The state of the Ark!



Ark gives you a choice of Limited Distance Modems.

They still come out of the Ark two at a time. The Ark Model 4 offers asynchronous transmission rates of 0-9600 bps. Our Model 1B, synchronous format, has a data range of 1800 to 19,200 bps. Each conforms to Bell System's PUB requirements and EIA interface standards. In addition, the Model 1B is designed with complete self-test diagnostics.

Both models feature CMOS technology and are available in either stand-alone or rack mount configuration.

Ark assures the fastest delivery. Call us today and your order is shipped within 24 hours! High speed limited distance modems. High speed unlimited distance delivery. That's the state of the Ark!

Model 4
Asynchronous,
0-9600 bps

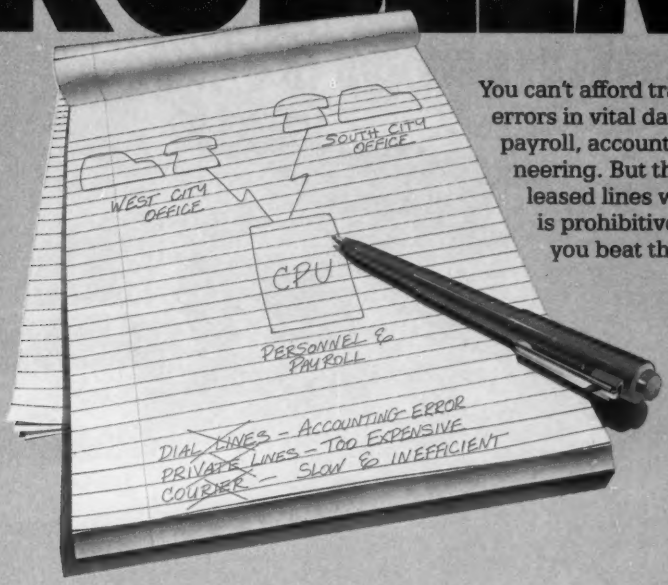
Model 1B
Synchronous,
1800-19,200 bps

Contact us now for more information. We manufacture a wide range of communication adapters such as elastic asynchronous-to-synchronous interface adapters, port rotary selectors, modem eliminators, frequency division multiplexers and other communications devices.

ARK Electronic Products, Inc., 325 W. Hibiscus Boulevard, Melbourne, Florida 32901, (305) 724-5260, Telex 56-6537.

ARK
ELECTRONIC PRODUCTS

PROBLEM:



You can't afford transmittal errors in vital data, such as payroll, accounting, and engineering. But the cost of leased lines with protocol is prohibitive. How can you beat the system?

SOLUTION:

Call us. We're Prentice, the people with local data distribution solutions.

And with our new UniMux or MiniMux and our 212A modem, you'll be able to use low-cost dial lines with SDLC protocols for error-free transmission at the lowest possible cost.

We're the only people that can deliver the full solution. And these products, like all others in our full line of modems, line drivers and multiplexers, are available for immediate delivery.

Developing better solutions, delivering them faster—it's a part of why Prentice is fast becoming a leading supplier of local data distribution systems for the world's leading companies.

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PRENTICE

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Data Transmission Equipment

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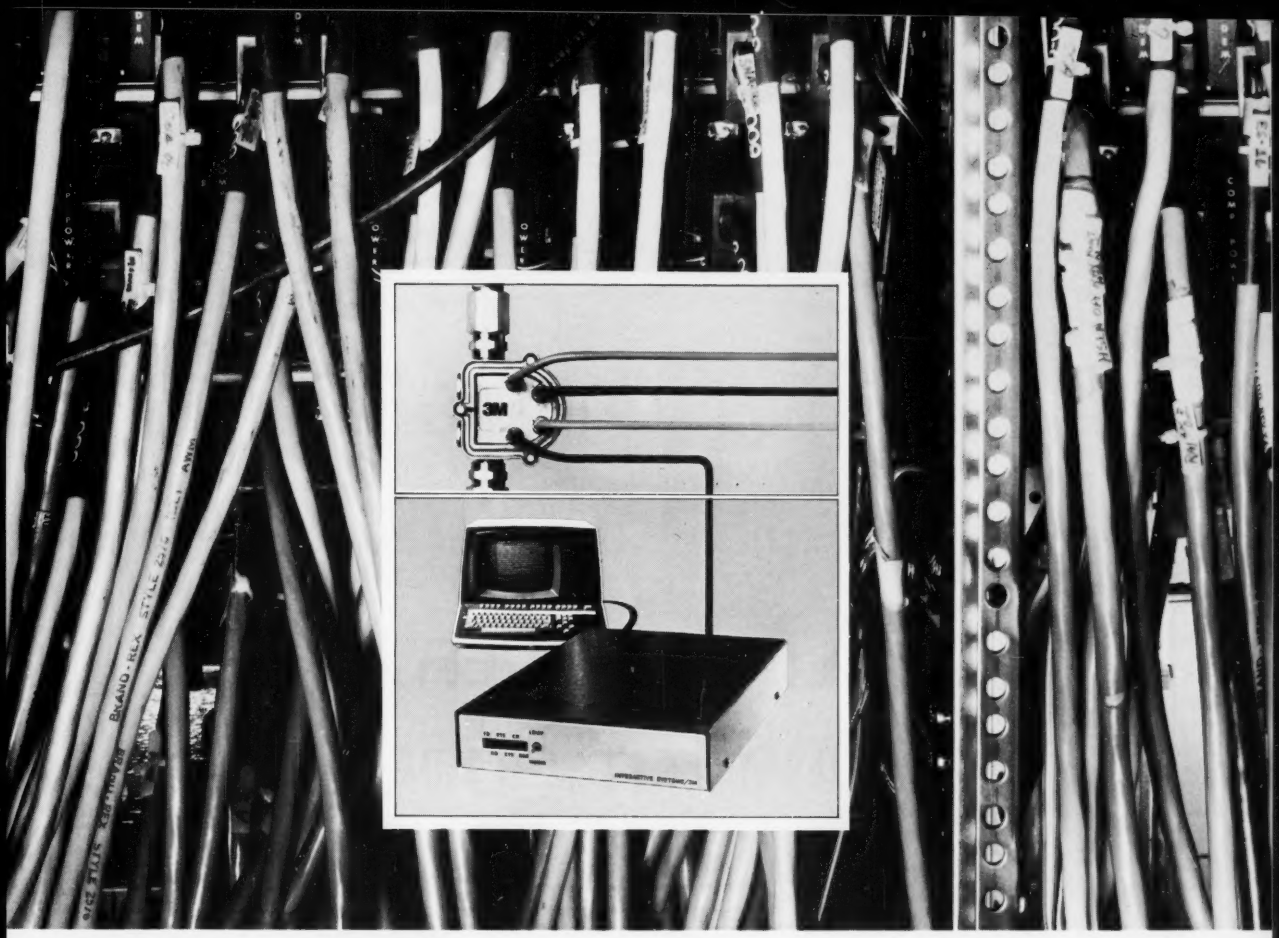

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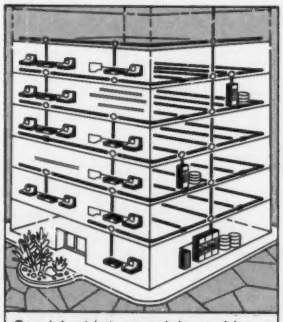

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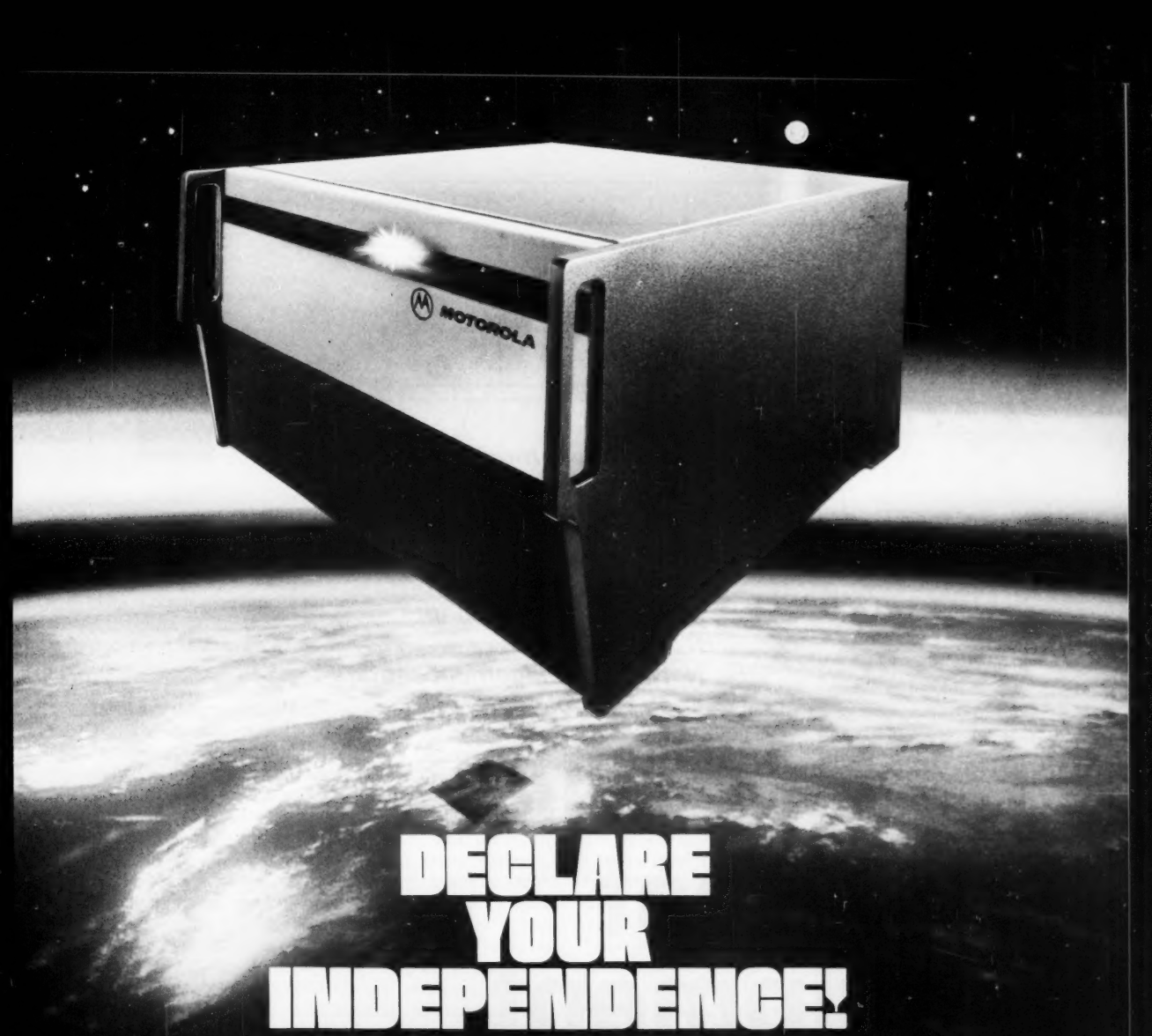

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Diagnostic and Test Equipment

The network operations manager is responsible for keeping all terminals up and running as long as possible, minimizing downtime. Why is this already difficult job becoming harder? There are several reasons, some mathematical and some intuitive.

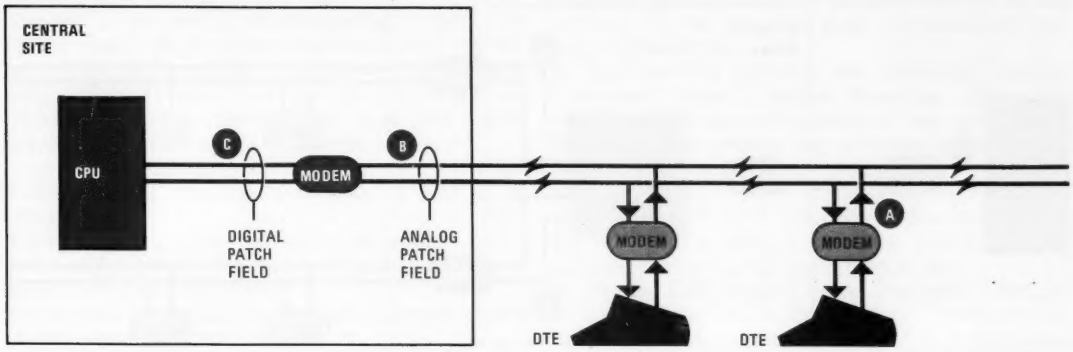
For one thing, the more complex a network becomes, the greater its probability of failing. Imagine that more and more sophisticated terminals, processors, and concentrators replace their simpler counterparts in a communications network: Intelligent concentrators replace dumb multiplexers; intelligent terminals replace simple teleprinters. The chance that a component will fail increases simply because the network has more components—such as semiconductors and switches—each with its inherent failure rate.

In addition, as the network grows, so does the time necessary to identify the cause of a problem. Because there are more pieces to monitor, it takes longer to identify the problem area. Compare the relative simplicity of identifying a "streaming" terminal condition on a point-to-point line with the complexity of pinpointing the same condition on a multidrop line equipped with a dozen remote stations. (Streaming occurs when a terminal's request-to-send, or RTS, signal is locked "on," causing the associated modem's carrier signal to remain constant. This interferes with transmissions from other terminals on that line.)

Finally, the time to cure any problem grows as the network expands, because the distances between the terminal sites and the locations of spare equipment are greater. The result is that users suffer from the inconveniences and from declining network availability. Thus, each minute of terminal downtime loses business and customers' goodwill. Alleviating downtime is difficult. Manual backup techniques are too expensive to maintain at each installation. Besides, they sustain network operation only for short periods of time before a user experiences further inconveniences.

Is there any plan that allows a network to grow without imperiling availability? Some sectors of the

1 Analyzing remote signals



data communications industry have addressed this issue through the design of technical-control methods and the manufacture of network-control hardware and software.

Network diagnostic plan

The earliest and most basic approach to managing a network starts with equipment at the central site. The network manager must first provide the central-site operator with means to directly access any analog interface or modem-terminal interface. This access is possible through either jack fields and patch cords, of both analog and digital varieties, or, more recently, sophisticated switching arrangements utilizing semiconductors and computerized control. The central-site (CS) operator, equipped with modern diagnostic and control devices, can replace the local technician in many on-line functions. Access to network interfaces allows him both to monitor signals for measurements and to intercept and substitute signals for testing.

In the analog domain, the CS operator may need to measure signals at the access points. For example, using only the data signal patterns usually present on the lines, he can measure the signal level or connect a particular analog signal to a loudspeaker or an oscilloscope for extended examination.

For measuring analog signals received from remote sites, central-site access alone is insufficient, and coordination with the remote sites is necessary. Say that a CS operator measures the received-signal level on the inbound (to the CPU) two-wire link connecting a remote site to the central site, as shown in Figure 1. Although he can easily attach a voltmeter to the analog wires as they appear on his centrally located jack field at B, a problem arises when he tries to excite only the data transmitter at remote site A. For that, he needs a conveniently placed confederate to ensure that the modem transmitter at A is turned on and is sending a random data pattern. Of course, if the centrally located operator could selectively trigger the remote modem to send a random data pattern, then measuring signal levels on multipoint links would be more convenient. But this remote-control capability at the central-site modem is the cornerstone of network control and is not normally considered part of technical control.

Consider the advantages of centrally located equipment that can monitor and display digital traffic without requiring remote personnel. When the network operates with relatively few transmission errors, the data signals passing the central modem/computer interface reflect the transactions of all remote sites. (A high error rate on the high-speed, or trunk, line negates the benefits of central-site monitoring.) Referring again to Figure 1, that means that data bound for, or returning from, any remote site on a multipoint line must pass the interface labeled C. Of course, the same data, in analog form, also passes point B. But more can be learned about software- and protocol-related problems by monitoring the digital form at point C.

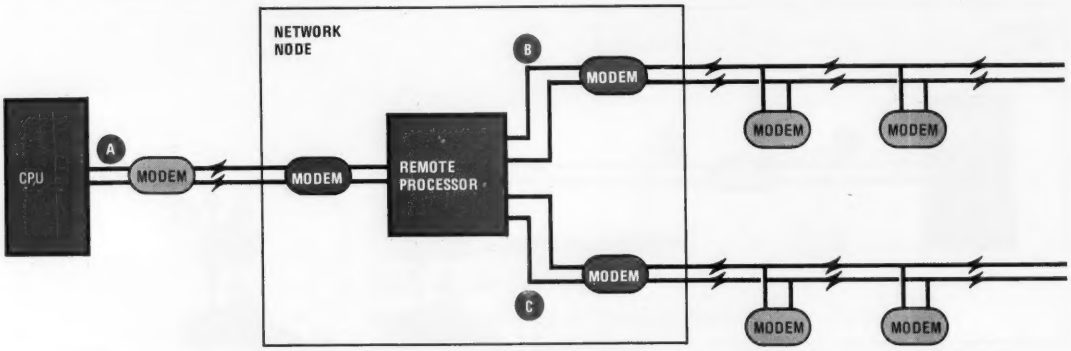
Using a device for capturing and displaying the digital data at the central site, a trained CS operator can identify network faults by observing the structures of messages. With a more intelligent data monitor, the operator can program the device to ignore all messages except those with a particular response code. In this manner, protocol or software faults can be diagnosed relatively quickly.

Content monitoring and emulation

The step beyond data-content monitoring is data emulation, which is similar to using standard test signals in the analog domain. Here the CS operator composes and then substitutes test-data patterns in place of the normal traffic. By observing the network's response, he can further diagnose and solve problems.

Content monitoring and emulation are commercially available today, but they have weaknesses that are not obvious on first examination. These techniques are vulnerable to transmission faults and cannot discriminate among error sources. For example, if a CS operator monitors a particular line and numerous parity errors appear, he could assume that a severe problem exists somewhere on the line between the computer and terminal modems. However, a data monitor cannot distinguish among bit errors caused by a faulty modem, an out-of-tolerance telephone line, or an intermittent

2 Testing multitiered network



terminal. Further, if the errors occur too frequently, the monitor will cease to give any useful information whatsoever. These same objections apply to the network-control systems based solely on main-channel data.

Another shortcoming of centrally located monitors and emulators (as well as analog patching and measuring equipment) is their inability to provide useful service for outlying sites in multitiered networks. As Figure 2 shows, data crossing point A is not necessarily related in any simple fashion to data passing points B and C, because the remote network mode may represent an entirely independent processing function.

However, network managers may insist on maintaining one diagnostic and control facility in this architecture. In future multitiered networks, the only distinguishing characteristic of the central site may be the network manager's office. Computers and analog subnetwork centers may be spread all over the countryside in future meganetwork configurations, while management insists on having only one network-control center responsible for overall operations management—no matter how incongruous it may appear.

Clearly, a technical-control center based on centrally located access, test, and control devices—and lacking remotely controllable equipment—is insufficient to control the total network, especially in multipoint and multitiered networks. The most effective way for a network manager to hold downtime in check is through unified network control.

Tips for success

To meet the objectives of unified network control and thus inhibit network downtime, management should:

- Place comprehensive diagnostic, test, and control facilities in the hands of the network manager.
- Allow these facilities to be centrally controlled but implemented at any remote site in the network.
- Make these facilities sufficiently independent of the other network components so that the network manager, and not his vendors, can arbitrate field-service issues ("fingerpointing").

Two key questions about network control remain: What are the best features? What tests and remedial

Network-control checklist

NONINTRUSIVE TESTS

TERMINAL-RELATED
- ☐ DTE POWERED AND CONNECTED
- ☐ DTE/DCE INTERFACE-LEAD STATES
- ☐ DTE STREAMING
- ☐ DTE-STREAMING DISABLED

CHANNEL-RELATED
- ☐ CHANNEL CONTINUITY
- ☐ LEVEL OF RECEIVED ANALOG SIGNAL

MODEM-RELATED
- ☐ MODEM POWERED?
- ☐ QUALITY OF RECEIVED SIGNAL

INTRUSIVE TESTS

QUANTITATIVE
- ☐ STEADY-STATE ERROR RATE
- ☐ SWITCHED-CARRIER ERROR RATE

QUALITATIVE
- ☐ MODEM SELF-TEST
- ☐ ANALOG AND DIGITAL LOOPBACK CONTROL
- ☐ TRANSMITTER CONTROL

REMEDIAL FUNCTIONS

- ☐ DISABLE STREAMING TERMINALS (AUTOMATIC OR REMOTE MANUAL)
- ☐ SWITCH TO HOT SPARE MODEM
- ☐ DIAL-BACKUP OF PRIVATE-LINE FACILITIES

ANALOG MEASUREMENTS

- ☐ DATA-SIGNAL LEVELS
- ☐ TEST-TONE LEVELS
- ☐ RELATIVE QUALITY OF DATA SIGNAL (ESTIMATED)
- ☐ SIGNAL-TO-NOISE RATIO (ESTIMATED)
- ☐ PHASE JITTER (ESTIMATED)
- ☐ HIT PHENOMENA

controls can users expect in state-of-the-art networks?

To select a good network-control scheme, the user should consider three design elements: (1) the test channel, (2) the remote addressable test module, and (3) the central-site controller. (A general rule is that the user should strive to find a modem vendor who can supply both his network-control equipment and his modems. Splitting suppliers here could later cause grave incompatibilities and incomplete coverage.)

An automated network controller does the following:

- Automatically executes a nonintrusive test at all remote sites
- Flags changes in the nonintrusive test results
- Schedules intrusive testing based on time of day and particular network addresses
- Maintains hard-copy or magnetic storage of the intrusive-test results and changes ■

For more on diagnostic and test equipment and their applications, see the following DATA COMMUNICATIONS articles.

1. "How to gauge the reliability of tree-shaped nets," T. S. Liu, May 1981, p. 99. This piece points out the important considerations in deciding whether to use switching or not and how these considerations can reduce network failure.

2. "Early-warning software for preventing network breakdown," Peter R. Nielsen, November 1980, p. 93. An operating-system subroutine not only tallies errors but also decides whether they are endangering either a component or the total network operation.

3. "How network control curbs downtime," David L. Lyon, July 1980, p. 52. The price of downtime can be the undoing of a network, regardless of its speed and sophistication and price/performance ratio.

4. "Making DDP network failures 'invisible,' " Richard A. Lang, April 1980, p. 95. A network manager must continually maximize the availability of a distributed data processing scheme. In some cases, the conditions that hinder availability are almost impossible to eliminate or control, even by the most carefully outlined operating procedures.

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Hewlett-Packard
Colorado Telecommunications Div.
Colorado Springs, CO
Infotron Systems Corporation
Cherry Hill, NJ
International Data Sciences Inc
Lincoln, RI
KeyTek Instrument Corp
Burlington, MA
Lambda Electronics
Melville, NY
Lear Siegler Inc
Sierra Electronic Div
Menlo Park, CA
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Northeast Electronics Div
Concord, NH
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Sorbus Service Div of MAI
Frazer, PA
Tektronix Inc
Beaverton, OR
Telecommunications Techniques Corp
Gaithersburg, MD
Telecommunications Technology, Inc
a Unit of General Signal Corp
Sunnyvale, CA
Terminal Data Corp
Rockville, MD
U S Instrument Rentals
San Mateo, CA
The Widget Works
St Augustine, FL

ERROR RATE DETECTORS

ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
Astrocom Corp
St Paul, MN
Atlantic Research Corp
Alexandria, VA
Bowmar/Ali Inc
Acton, MA
California Microwave Inc
Sunnyvale, CA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Com/Tech Systems
New York, NY
CSS Telecommunications
Mountain View, CA
Dataproducts of New England
Wallingford, CT
Digilog Inc
Horsham, PA
Digitech Industries Inc
Ridgefield, CT
Dynatech Packet Technology
Springfield, VA
Electrodata Inc
Bedford Heights, OH
Electro Rent
Burbank, CA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
ESP Digital Systems Corp
Des Moines, IA
Frederick Electronics Corp
Frederick, MD
Gandalf Data Inc
Wheeling, IL
Glasgal Communications Services Inc
Harrington Park, NJ
Halcyon
San Jose, CA
Hewlett-Packard Co
Palo Alto, CA
Hewlett-Packard
Colorado Telecommunications Div.
Colorado Springs, CO
Idacom Electronics Ltd
Edmonton, AB
Canada
International Data Sciences Inc
Lincoln, RI
The David Jamison Carlyle Corp
Los Angeles, CA
Kapusi Laboratories
San Mateo, CA
Kinex Corp
Largo, FL
Lear Siegler Inc
Sierra Electronic Div
Menlo Park, CA
Leasametric
Foster City, CA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
LNR Communications Inc
Hauppauge, NY
Multi-Tech Systems Inc
New Brighton, MN
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
PolyMorphic Systems
Santa Barbara, CA
Remark International
Woodbury, NY
Sangamo Weston, Inc, Data Systems Division
Sarasota, FL
Tau-Tron Inc
Chelmsford, MA
Telecommunications Techniques Corp
Gaithersburg, MD
Tesdata Systems Corp
McLean, VA
The Widget Works
St Augustine, FL

FUNCTIONAL PARAMETERS TEST EQUIPMENT

The Edge Instruments Company
Phoenix, AZ
Tektronix Inc
Beaverton, OR

PROTOCOL ANALYZERS

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ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4
Applied Data Communications
Tustin, CA
Applied Delta Systems Inc
Bellmawr, NJ
Astrocom Corp
St Paul, MN
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Commtex Inc
Crofton, MD
CSS Telecommunications
Mountain View, CA
Dataproducts of New England
Wallingford, CT
Develcon Electronics Inc
Doylestown, PA
Digilog Inc
Horsham, PA
Digitech Industries Inc
Ridgefield, CT
Dynatech Data Systems
Springfield, VA
Dynatech Packet Technology
Springfield, VA
Electrodata Inc
Bedford Heights, OH
Electro Rent
Burbank, CA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
ESP Digital Systems Corp
Des Moines, IA
Glasgal Communications Services Inc
Harrington Park, NJ
Halcyon
San Jose, CA
Hewlett-Packard Co
Palo Alto, CA
Hewlett-Packard
Colorado Telecommunications Div.
Colorado Springs, CO
Idacom Electronics Ltd
Edmonton, AB
Canada

International Data Sciences Inc
Lincoln, RI
The David Jamison Carlyle Corp
Los Angeles, CA
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT, England
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Nu Data Corp
Little Silver, NJ
Protocol Computers Inc
Woodland Hills, CA
Questronics Inc
Salt Lake City, UT
Rental Electronics Inc
Palo Alto, CA
Syscom Inc
Sunnyvale, CA
Tekelec Inc
Santa Monica, CA
Tektronix Inc
Beaverton, OR
TeleProcessing Products Inc
Simi Valley, CA
Universal Data Systems Inc
Huntsville, AL
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San Mateo, CA
Via West Inc
Rio Rico, AZ

RESPONSE-TIME MONITORS

ATLANTIC RESEARCH CORP
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ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
HALCYON
San Jose, CA . . . . . ADV PGS 35,81
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4
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Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Chess
Denver, CO
Commtex Inc
Crofton, MD
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
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Develcon Electronics Inc
Doylestown, PA
Digitech Industries Inc
Ridgefield, CT
Dranetz Engineering Labs Inc
Edison, NJ
DTSS Incorporated
Hanover, NH
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Burbank, CA
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Des Moines, IA
Halcyon
San Jose, CA
Hewlett-Packard Co
Palo Alto, CA
International Data Sciences Inc
Lincoln, RI
Leasametric
Foster City, CA
Micom-Borer Ltd
Reading, Berks R920JT, England
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Paradyne Corp
Largo, FL
Questronics Inc
Salt Lake City, UT
Rental Electronics Inc
Palo Alto, CA
TeleProcessing Products Inc
Simi Valley, CA
Tesdata Systems Corp
McLean, VA
Universal Data Systems Inc
Huntsville, AL
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San Mateo, CA

RTS EMULATOR

ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
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Miami Lakes, FL . . . . . ADV PG 158
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
Atlantic Research Corp
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Black Box Catalog, Expandor Inc
Pittsburgh, PA
Com/Tech Systems
New York, NY
DataStream Communications Inc
Santa Clara, CA
Electro Rent
Burbank, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Innovative Electronics Inc
Miami Lakes, FL
Leasametric
Foster City, CA
Micom Systems Inc
Chatsworth, CA
Northern Telecom Inc
Nashville, TN
Tekelec Inc
Santa Monica, CA
TeleProcessing Products Inc
Simi Valley, CA
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA

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ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
PENRIL CORP
DATA COMMUNICATIONS DIV
Rockville, MD . . . . . ADV PG 64
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
T-BAR INC
Wilton, CT . . . . . ADV PG 159
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
Marina Del Rey, CA . . ADV PG Cover 2
ADC Data Communications
Minneapolis, MN
American Satellite Company
Rockville, MD
Applied Delta Systems Inc
Bellmawr, NJ
Atlantic Research Corp
Alexandria, VA
Cablebus Systems Corp
Beaverton, OR
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Commtex Inc
Crofton, MD
Compumart
Cambridge, MA
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
East Norwalk, CT
Dataproducts of New England
Wallingford, CT
Digilog Inc
Horsham, PA
Digitech Industries Inc
Ridgefield, CT
Dominick Tarricone & Co
Commack, NY
ENA Datasystems Inc
Rexdale, ON
Canada
Engineered Systems Inc
Omaha, NE
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
ESP Digital Systems Corp
Des Moines, IA
General DataComm Ind Inc
Danbury, CT
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Granger Associates
Santa Clara, CA
GTE Telenet Communications Corp
Vienna, VA
Hekimian Labs Inc
Gaithersburg, MD
Hewlett-Packard Co
Palo Alto, CA
InteCom Inc
Dallas, TX
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA

Find out about the company that makes the product.
Turn to **Vendor Directory, page 301.**

Johnson Systems Inc
McLean, VA
Kinex Corp
Largo, FL
Micom-Borer Ltd
Reading, Berks R920JT,
England
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Page Communications Engineers Inc
Vienna, VA
Paradyne Corp
Largo, FL
Penril Corp
Data Communications Div
Rockville, MD
Qytel
New York, NY
Racal-Milgo
Miami, FL
RCA Global Communications Inc
New York, NY
Sesa—Honeywell Communications, Inc
Herndor, VA
Southern Pacific Communications Service Co
McLean, VA
Stanford Telecommunications Inc
Sunnyvale, CA
Stromberg-Carlson Corp
Sanford, FL
Syscom Inc
Sunnyvale, CA
Systems Research Laboratories Inc
Dayton, OH
Sytek Inc
Sunnyvale, CA
T-bar Inc
Wilton, CT
Telecommunications Technology, Inc
a Unit of General Signal Corp
Sunnyvale, CA
Telecom Systems Group
Cedar Grove, NJ
Telenokia Oy
Espoo 60,
Finland
Tele-Signal Corp
Hauppauge, NY
Tesdata Systems Corp
McLean, VA
Timeplex Inc
Rochelle Park, NJ
TRAN Telecommunications Corp
A Sub of Amdahl Corp
Marina Del Rey, CA
Tymnet Inc
Cupertino, CA

For further catalog information, turn to **UpDate Service Card, page 201.**

TECHNICAL CONTROL CENTERS

ADC DATA COMMUNICATIONS
Minneapolis, MN . . . . . ADV PG 157
ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
SORBUS SERVICE DIV OF MAI
Frazer, PA . . . . . ADV PG 168
T-BAR INC
Wilton, CT . . . . . ADV PG 159
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45

ADC Data Communications
Minneapolis, MN
Applied Delta Systems Inc
Bellmawr, NJ
Atlantic Research Corp
Alexandria, VA
Bradley Telcom Corp
Leonia, NJ
California Microwave Inc
Sunnyvale, CA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
CSS Telecommunications
Mountain View, CA
Datacomm Management Sciences Inc
East Norwalk, CT
Dataproducts of New England
Wallingford, CT
Data Set Cable Co Inc
Ridgefield, CT
Data Switch Corporation
Norwalk, CT
Digilog Inc
Horsham, PA
Digitech Industries Inc
Ridgefield, CT
Dominick Tarricone & Co
Commack, NY
DP Communications
NY, NY
Dynatech Data Systems
Springfield, VA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
ESP Digital Systems Corp
Des Moines, IA
General DataComm Ind Inc
Danbury, CT
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Granger Associates
Santa Clara, CA
GTE Telenet Communications Corp
Vienna, VA
Hawaiian Telephone Co
Honolulu, HI
Hekimian Labs Inc
Gaithersburg, MD
Hewlett-Packard Co
Palo Alto, CA
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kinex Corp
Largo, FL
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Page Communications Engineers Inc
Vienna, VA
Racal-Milgo
Miami, FL
RCA Global Communications Inc
New York, NY
Rixon Inc
Silver Spring, MD
Sorbus Service Div of MAI
Frazer, PA
Syscom Inc
Sunnyvale, CA
Sytek Inc
Sunnyvale, CA
T-bar Inc
Wilton, CT
Telecommunications Techniques Corp
Gaithersburg, MD
Telecom Systems Group
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Tele-Signal Corp
Hauppauge, NY
Tesdata Systems Corp
McLean, VA
Timeplex Inc
Rochelle Park, NJ

We've widened

A few years ago the Spectron Division of Northern Telecom set the industry standard for diagnostic devices with the D-601 DATASCOPE.

And today we're doing the same with our state-of-the-art D-901.

The D-901 is the most flexible interactive data line analyzer and emulator there is. Because it has a diskette based operating system, you can program it to fit your data network's requirements. Even as your network changes and grows.

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If your data network should adapt to the X.25 protocol, the D-901 DATASCOPE can quickly adapt to your network. Changing protocols or changing lines is as quick and easy as changing a diskette. The D-901 willl make obsolescence obsolete.

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You never have to worry about any data line being too fast for the D-901. It has an amazingly high throughput (up to 1.6 Mbps) and high speed recording. And that's going to pay off in a lot less downtime.

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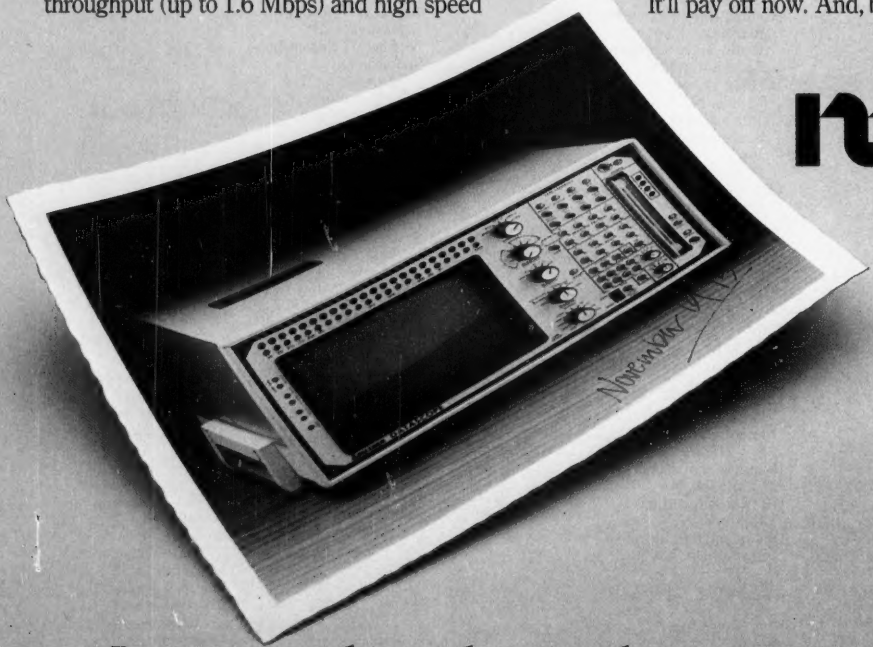
You can lease it. Lease for a year, two or three with an option to buy, renew your lease or give the D-901 back to us. We're that confident. And it won't cost you much either; the implicit interest rate in your lease is considerably below today's prime rate. To find out more about this unique leasing program and get more information on the D-901, write to Northern Telecom Inc., Spectron Division, Marketing Communications Department, 344 New Albany Road, Moorestown, NJ 08057 or call (609) 234-5700.

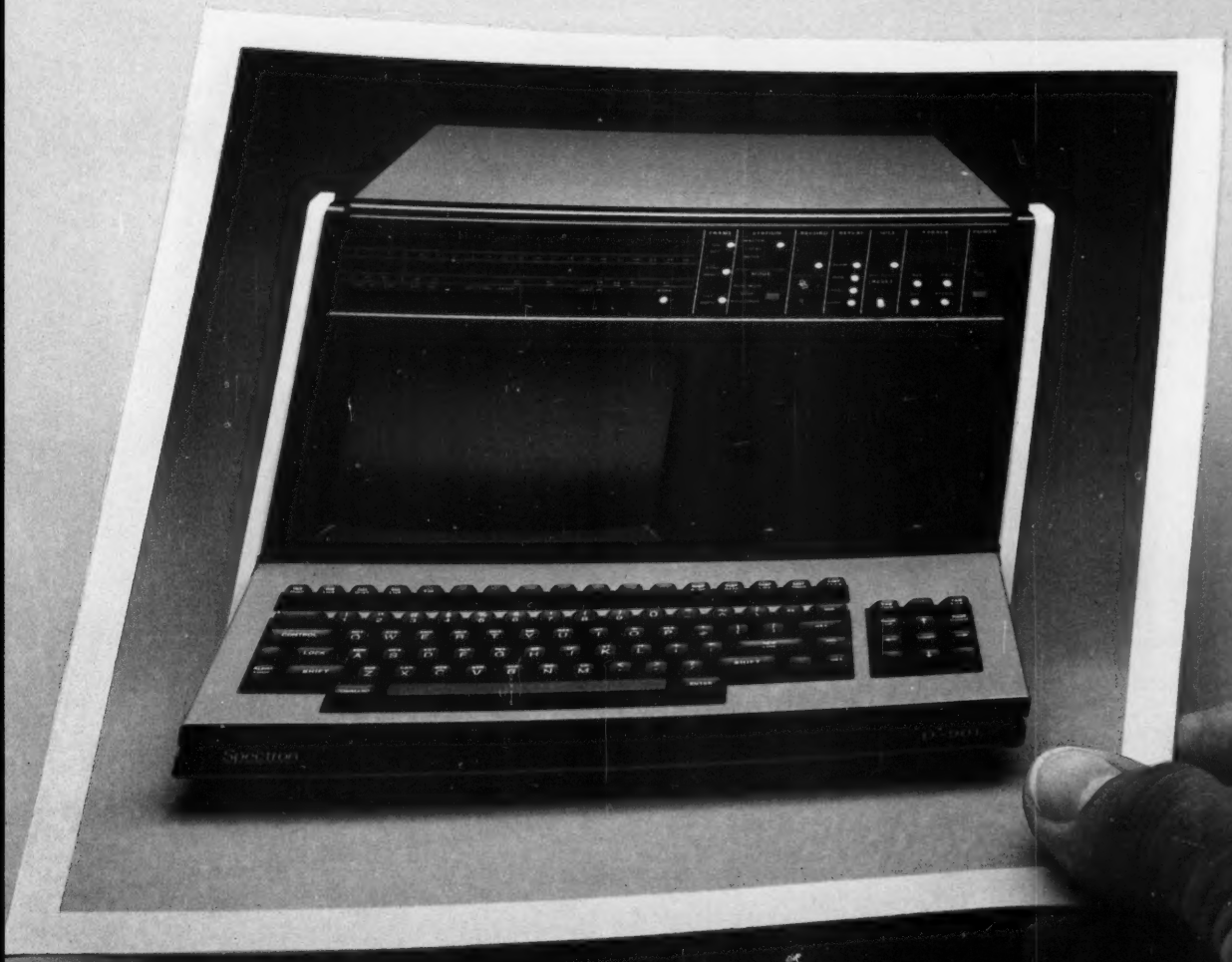
It'll pay off now. And, better still, in the future.

northern telecom



In 1975, we brought you the Spectron D-601 DATASCOPE, which soon became the industry standard.

your scope.



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D-901 DATASCOPE. The state-of-the-art.
It's programmable to fit your network
now and tomorrow.

Maximize control of your network from one central point.

Away from the hum of the computer room, in your office or control room next door. Down the hall, or fingertips away in the quiet of your workspace . . . From one central point, DYNANET constantly monitors your network and shows you its status at a glance.

Critical information at your fingertips.

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Your senses will direct you.

An innovative combination of sight and sound directs your attention to problem areas:

- *Automatic Audible Alarm*—A sophisticated scanning scheme activates audible tones so you'll know there's a malfunction in any line the instant it happens.
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So when you have a problem, you'll be alerted to it right away.

Finally, management reports to monitor performance.

Answers. Histories. Periodic summary reports. When and how do failures occur? Do short duration failures precede longer outages? What is the history of failure of a particular line? Or group of lines? Or the entire network at a particular time of day. You keep abreast of performance.

Our Senior Marketing Engineers are ready to discuss how DYNANET and Dynatech can give you state-of-the-art control of your communications network. Write, or call today:

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7644 Dynatech Court
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Dynatech
Data Systems

We call our Network Management System DYNANET . . . You'll call it indispensable.

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Now a total solution to problems encountered in data communications networks. ARC's new INTERVIEW 4500 Interactive Test System. Featuring a new concept in portable test equipment design that simplifies diagnostics of data comm problems and reduces the most complex testing to a few simple operations.

Three units in one. The 4500 is an emulator, programmable monitor and high speed bulk recorder. Fully emulates CPU, terminal and node. And simplifies network performance measurements.

Special capabilities to emulate packet protocols and SNA. Seven codes are standard.

The first graphic display that guides the operator in entering timing relationships between data and interface leads.

Self documented tapes allow user to build library of diagnostic tests. Unit records data and all test parameters, providing a record of system problems with the test that found the problem.

Selective recording of specific terminal, controller and logical channel eliminates time spent reviewing unrelated data. Reliable 72 Kbps recording is provided by a one megabit high speed bulk memory (optional).

Easy to understand code converted keyboard and self-teaching menus dramatically reduce training time.

Easiest to use interactive tester. Unique triggers automatically locate problems by simultaneously looking for up to 16 test conditions. Significantly reducing time required locating problems in the network. Developing a test is no more complicated than responding to a few simple prompts.

If you need interactive capability, your best choice is the 4500. Or you can have monitor capability now with the 3500, and convert it later to a fully interactive unit.

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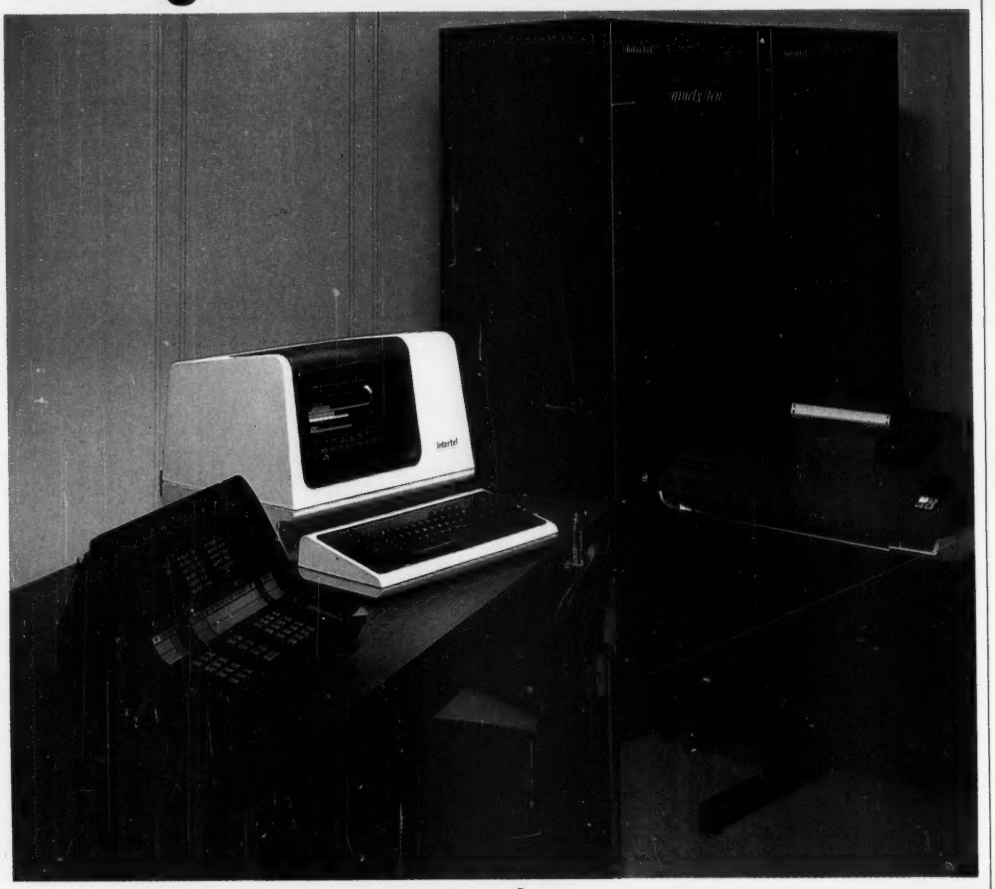
This is what trouble-free network management looks like.



The New Intertel 90/10.

Corporate management sees things one way. Datacomm managers see things another. We're out to close this gap with the only truly effective network control and management system available today. The new Intertel 90/10. It speaks to the needs of both corporate and datacomm managers.

The Intertel 90/10 gives datacomm managers all the network monitoring, diagnostic control and restoral power they need. With an aggressive service program that provides "Guaranteed Uptime". And it's a vital report-generating tool that gives corporate management the data to improve service, increase profits and plan for the future. Intertel 90/10 . . . the most advanced network management system on the market. It's closing the communication gap fast.

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Field service isn't the same now. It's easier. The Mini Fox is the industry's lightest (17 pounds) and smallest full-capability data monitor. At less than $4k, it's also one of the least expensive.

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The 802A is the most advanced, powerful monitor available. It does everything the Mini Fox does, and much more. It handles full-duplex data up to 56 kb/s. And it includes on-board, real-time recording capacity of 4 Mbits. Combine that with the 802A's capability in counting, timing, and statistical analysis, and you have unmatched versatility.

In addition to its large 7-inch display, the 802A can even drive an optional color monitor, in seven distinctive colors. And all this comes at a price that's thousands of dollars less than comparably equipped monitors. If there are any.

The 801A and 802A are both "best buys," depending upon your application. They're what you'd expect from Halcyon—the established leader in testing both digital and analog circuits. And the emerging leader in statistical multiplexing and networking.

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The 3709 NPM interfaces via patch panel or RS 232 connector. The system is available for delivery **today** for BSC and HDLC/SDLC type protocols, with line speeds to over 56K bps, in configurations from 4 to 256 lines. Color CRT and additional protocols optional.

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- **Real Time Network Operations Control**
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- **Remote Line Data-Monitor Function**
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- **Greatest Available Degree of Cost Effectiveness**

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256 Line corporate facility.

8 Line banking installation.

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How to obtain network control wherever you are. And wherever you aren't.

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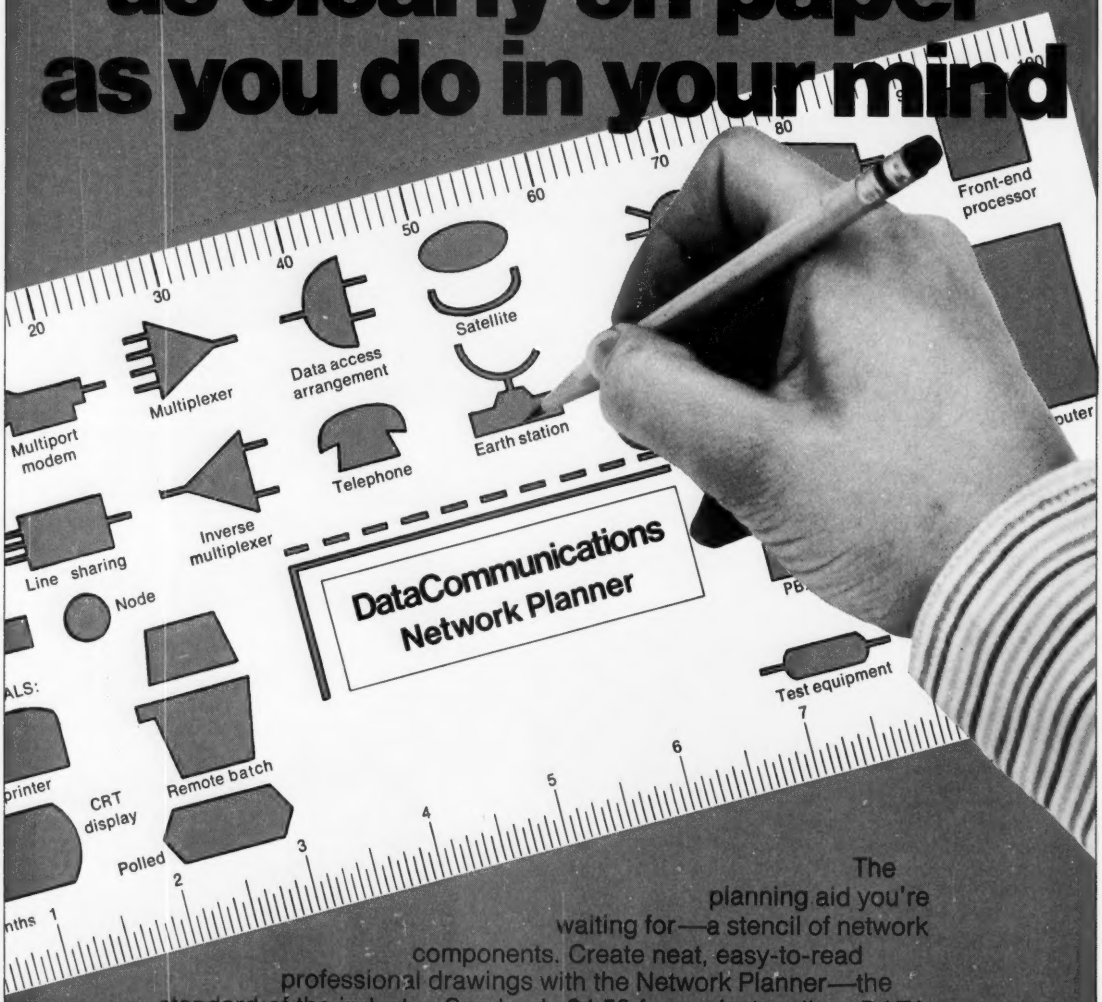

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Distributed Data Processing

Few areas in the data communications world have seen as much recent technological innovation and new commercial offerings as local networking. Development has primarily responded to users' demands for greater transmission speed and capacity. Although common carrier communications is adequate for most remote-job-entry (RJE) terminals, interactive terminals, and clustered terminal controllers, independently programmable computers need to exchange data at channel, not common carrier, speeds.

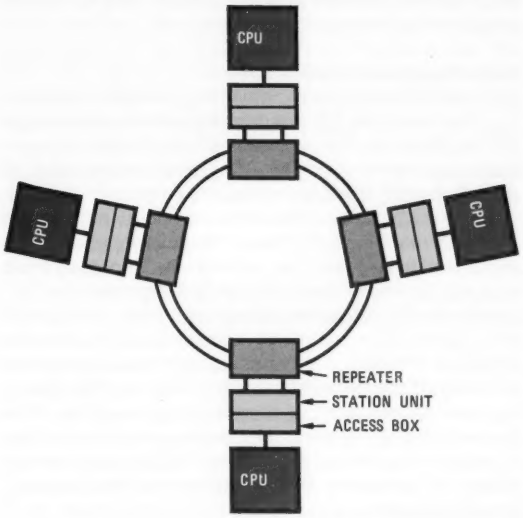
Local networks are also meeting users' requirements for enhanced responsiveness. In the process-control environment, for example, a manufacturing operation could fail if exceptional conditions are not relayed to another minicomputer within milliseconds. In addition, since the costs of individual computers have plunged dramatically in recent years, users are adding computers at central sites to provide redundancy and extra processing power.

More and more users are implementing minicomputers as the feasibility of dedicated computers is realized. Yet, although the cost of these computers is decreasing, the price of high-performance peripherals such as impact printers and high-capacity disk drives remains high. Also, as the cost and complexity of maintaining databases continues to grow, the need for high-speed local-network links to allow these many small, fast computers to access and share the valuable peripheral resources becomes obvious.

A significant step in the development of local networking was the network's becoming a facility separate from the discrete computers attached to it, rather than just a series of links connecting individual computers. The initial design objectives (which remain critical even today) were threefold.

1. The local-network connections should allow data to move directly from one node to another without intervention by intermediate host processors. This essentially establishes local-network communications on a peer-to-peer basis, for which no single CPU is responsible

1 The Cambridge ring network



for all communications.

2. Data enters the network in a standard format. This means that adding a new type of processor to the local network requires a hardware and software interface between the new host and the local network. With this interface, the new processor should be able to communicate with any network node.

3. Since both efficient throughput and high responsiveness are goals of the local network, it must be able to allocate data-transmission capacity on a demand—rather than on a partitioned—basis. Traffic between any two nodes on a local network tends to be "bursty," in the same sense that data traffic volume between a CPU and a disk drive varies greatly over a period of time. At the same time, the network must ensure that a single node with high traffic requirements does not lock out other network nodes.

Enter the ring

Incorporating these separate design objectives gave birth to the "ring networks." Probably the most publicized was built at the University of Cambridge, in England, beginning in 1974. The ring itself (Fig. 1) consists of a set of repeaters connected in a loop by a pair of twisted-pair wires. The loop continuously circulates a pair of packets at a bit rate of 10 Mbit/s. Each packet contains 2 bytes of information plus routing and control information, which is constantly examined by each repeater.

If a node on the ring wants to transmit, it waits until it detects a passing packet that is empty. It then forwards the packet while inserting its own routing information and data. The packet then makes a complete circuit on the ring and returns to the originator, after it has been marked as copied or rejected by the receiving node. The original sender then marks the packet as empty and forwards it on the ring so that another node can use it.

The repeaters are not powered by the processor nodes but by d.c. voltage injected at several points onto the network. This minimizes the possibility of a repeater failure. A station unit informs the repeater when data is to be sent and received and provides the data, in parallel digital form, to the access box, which interfaces the host computer.

The ring architecture realizes most goals of the local network. Data can proceed more or less directly to the intended destination at about 3 or 4 Mbit/s, which is adequate for most applications. Users have found that they achieve higher network performance by improving the communications link between the repeaters—typically by replacing the twisted pairs with coaxial cable. Depending on the adaptability of the access box, adding a new processor to the network interrupts network service only briefly.

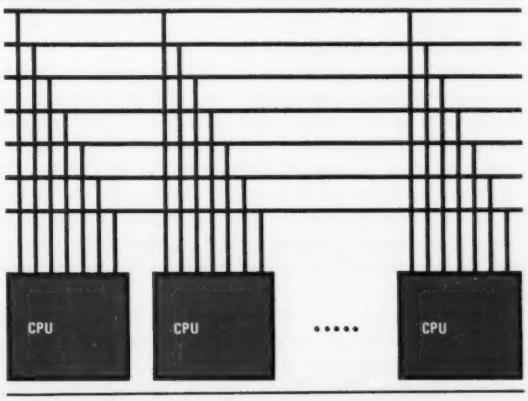
The major disadvantage of the ring network is that a failure of any single repeater or communications link will cause the entire network to fail. Furthermore, these repeaters and links are often geographically distributed, so it is not always possible to immediately repair or circumvent their failures. Various refinements have been added to the Cambridge ring to detect the point of failure. Other network designs have attempted to centralize the ring so that all repairs can be performed from a single location.

The bus connection

A different type of local network is achieving commercial acceptance today. Network nodes, connected by a linear bus, can broadcast data directly to the destination. All other nodes simply ignore the broadcast data and await their turns to broadcast. A principal advantage of the bus architecture is that all nodes on the bus are passive; that is, if one node fails, it will simply fail to send or receive its signals—all other activity remains uninterrupted.

Local bus networks can be divided into two classes: digital (or parallel) and serial. The digital bus (Fig. 2) is an evolutionary extension of the modularity found in

2 Parallel bus



modern computer design. Each computer on a digital-bus network has an interface that drives an external data bus. The computer node can request the use of the bus and place a word of data on it, along with its destination address. Interfaces generally allow each attached computer to send or receive a block of data to or from any other computer on the bus.

All-digital bus networks essentially allow independently operating computers to share resources efficiently. They make it easy for users to expand the network to the maximum allowable number of nodes on the bus and are also very responsive—processors can exchange crucial data in microseconds. However, they have two significant disadvantages. First, digital buses limit the network link to the maximum distance that these digital signals can travel, generally no more than 100 feet. Second, although they are relatively easy to implement when all nodes on the network are the same type, if the kinds of processors vary widely, interfacing is more difficult.

The network story serializes

Although the digital (or parallel) bus architecture has many attractive aspects, its extremely limited distance range makes it generally unsuitable for a local network that is intended to connect most existing, in-place computers. The most successful technique to date for extending the bus distance is to use a single strand of coaxial cable instead of a set of digital signal lines (or "ribbon" cable). When the network is idle, no signal is present on the coaxial cable, and when a node on the local network chooses to transmit, it transmits a stream of data in bit-serial mode (Fig. 3). The data is broadcast throughout the length of the cable. The destination adapter analyzes the data, recognizes its address, and forwards it to the attached host. All other nodes on the serial bus ignore the data. Like those on the digital bus, all nodes are passive—they need not be operational for the network to function.

Coaxial cable as the transmission medium allows much higher bit-transmission rates than do twisted pairs or other transmission lines. Data can travel at speeds of 50 Mbit/s for a distance of 1 mile over some networks. Since it takes a relatively long time for a signal to propagate down the cable, it is generally best to send a rather large data block, or packet, between two nodes on the serial bus before control is relinquished to another set of nodes.

A significant problem, however, is determining which node is entitled, at any given time, to broadcast on the serial bus. Most current serial-bus techniques resolve contention through a method called CSMA (carrier sense multiple access). If the bus is idle, any node can transmit as soon as it is ready. If a node becomes ready to transmit when another node is active, it detects the signal passing on the coaxial cable (carrier sense) and refrains from transmitting until the current transmission is complete.

An occasional collision between transmitting nodes is inevitable. This occurs when two nodes begin transmission at essentially the same time, and each is initially blind to the other's signals. Various serial-bus implementations use different means of detecting a collision and determining the order of retransmission. Most call for a predefined or random timeout before retransmission is again attempted.

Advantages and applications

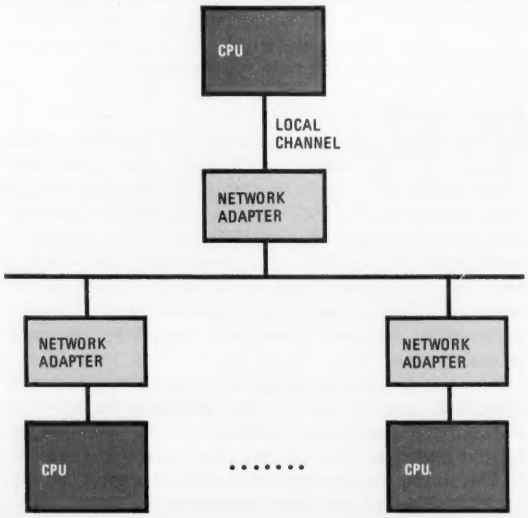
The passive, serial local network is a communications tool that users are discovering offers many advantages and applications. The high-speed communications provides users with new networking approaches, such as specializing the functions of various computers.

Say an organization has four computers, not all from the same manufacturer. One of these computers has a database that must be constantly accessed and updated by many branches of the organization. The classic configuration would require that all batched jobs affecting or using the database be run on the database machine. Furthermore, all on-line inquiry and updating of the database would run on a teleprocessing module installed on the database machine. This one machine would soon become enormous to be able to handle all computing functions that are not directly related to accessing the database (communications, queuing, and so on).

An alternative would be to have copies of the database in several different machines. However, this would present severe database-management problems because the capability for correctly updating all copies of the database is not yet commercially available.

Local networking could solve this problem by placing in another machine a module dedicated to receiving requests for database service over the local network. This software would handle the data requests, access the database machine more efficiently, and return the results over the local network. Applications such as on-line inquiry could access the database through the

3 Serial-bus network



local network in the same time they could access the database residing in the on-line computer. Batch programs can perform massive database updates over the local network because network transmission is frequently as fast as local peripherals. Not only can the database machine be much smaller because of its reduced computing requirements, but database management is still centralized in a single computer.

Another example of computer specialization is the on-line machine designed to service all on-line activity destined for the database machine. This machine, because of its dedicated function, can efficiently handle a large number of remote terminals. In addition, since the local network can, in some cases, handle the mechanics of moving data between different computer types, the user can employ different manufacturers' machines for these various functions.

The local network permits a type of distributed computing different from the industry standard. Rather than channeling menial computing chores away from a central processing unit (CPU), it turns a set of basically autonomous CPUs into "modules" in an integrated "system," which reverses the administrative complexity of distributed processors. Since applications and data can be centrally managed, the user has greater control over the organization's computing facilities.

Developing media

Local-networking applications will continue to proliferate, as will the technology employed for local transmission. To date, the primary transmission medium for local networks has been either twisted-pair cable or simple (baseband) coaxial cable. However, two new media have recently attracted attention in the high-speed communications field: fiber-optic and CATV (cable television), or broadband, cable.

Lightwave technology will mushroom throughout the 1980s because of these major attractions:

- Its potential bandwidth is virtually unlimited. Current fiber-optic transceivers can work in the 100-Mbit/s range, and their performance is expected to improve considerably in the next 10 years.
- Fiber-optic cable is virtually invulnerable to outside interference or "tapping" by unauthorized listeners (at the present time).
- Fiber-optic cable is much lighter and more compact than coaxial cable of the same bandwidth and, although about equal in price right now, promises to become much cheaper as mass production increases.

Fiber optics will probably become the best medium for point-to-point applications within the next few years. Current manufacturing can produce a 5-mile fiber-optic link that can transfer data at 44.7 Mbit/s. These characteristics will make fiber optics an attractive alternative for high-speed communications for distances between 100 feet and about 10 miles. This range may even be extended as repeating equipment is further developed. ■

For more on distributed data processing, see the following DATA COMMUNICATIONS articles:

1. "Local networking: The missing link emerges," Ken Hardwick and William Federbusch, July 1980, p. 81. The local network has evolved into a multinodal, high-speed bus that requires no centralized control.

2. "Minicomputers' network roles," Edwin E. Mier, October 1980, p. 77. The minicomputer's face is changing. It is now being employed in communicating roles ranging from front-end processor to distributed processor.

3. "An automatic pilot for the growing distributed network," Uyless D. Black, November 1980, p. 81. Network managers must actively control the DDP environment or it will control them.

4. "Local networks' consensus: High speed," Peter Hsi and Tsvi Lissack, December 1980, p. 56. A look at five local networks and two proposed standards reveals vital differences.

5. "The first all-in-one local network," Didier S. Castueil et al., August 1981, p. 93. This all-digital local network integrates data, voice, and video, and supports any vendor's equipment.

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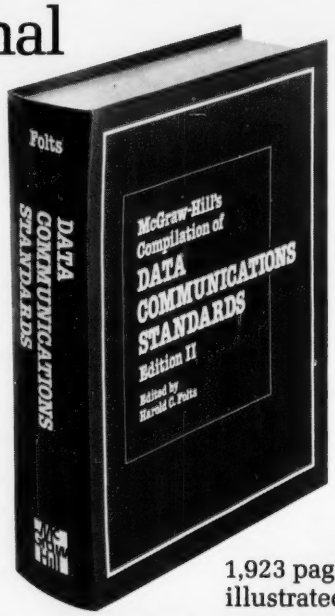

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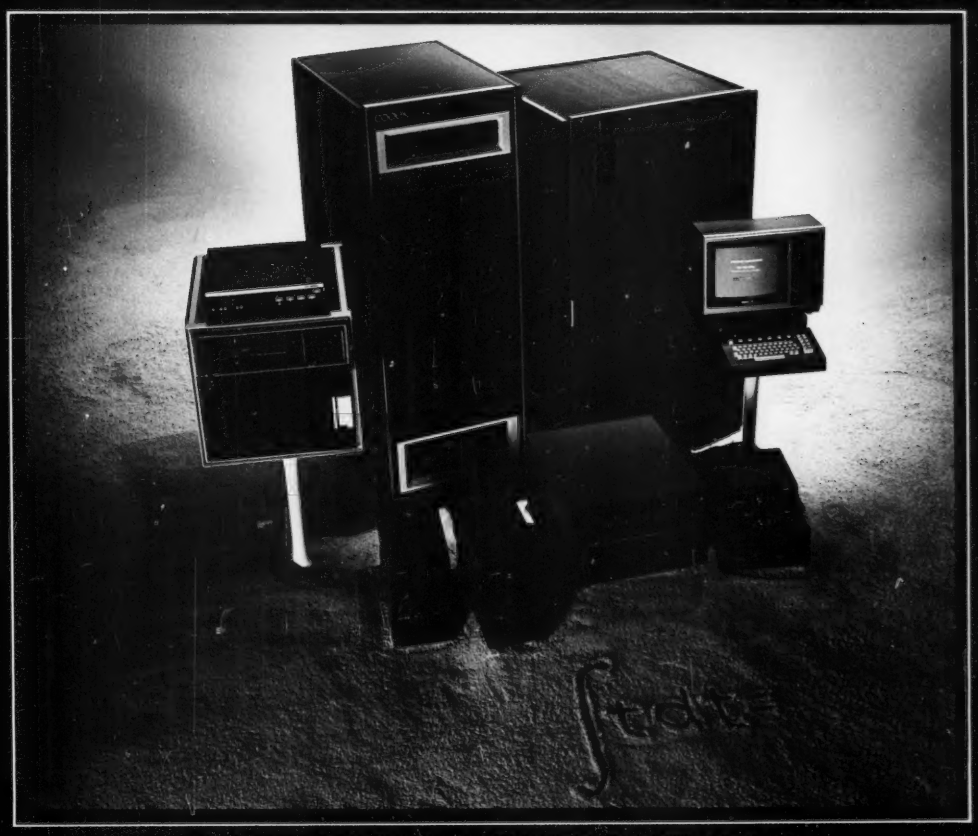

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Since protocol processing is handled by the IF-11/U200, and since computer access is on a high-speed Direct Memory Access (DMA) basis, the unburdened DEC computer continues to be available for everyday tasks.

Users at their terminals can access the PDP-11 in a normal RSX-11M environment, switch at will to a remote Univac 1100 mainframe under Uniscope 200 emulation and, when needed, can initiate data transfer between the two computers.

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Storage Devices and Media

The 1980s have witnessed technological advances in storage devices that will eventually make possible data communications benefits such as protocol translators and speech recognition. Memory capacity in silicon and on disks has increased, while prices have decreased. But three major companies pulled out of the bubble-memory business this year, claiming lack of cost-effectiveness as the overriding reason. Their departures leave only one remaining major supplier in the United States.

Users purchasing silicon memories will find that the price of 65-kbyte random access memory (RAM) is dropping rapidly and will probably converge with that of 16K RAMs in one and a half years. Soon after that, the public will see quarter-megabyte and then megabyte storage devices.

The availability of such large-capacity, inexpensive semiconductor products will lead to small microprocessors that achieve translation of different protocols for users. These microprocessors can be embedded in networks so that a terminal built with a single protocol and a single architecture can be made to appear like one having a different architecture. Large-capacity storage devices are also necessary for speech-recognition applications.

Disks are still the dominant mass-storage devices. Their bit densities have increased several hundred times in the past decade and are expected to continue this trend at an accelerated rate.

The highest-density hard disks have a packing density about 10 times that of the highest density semiconductor memory and about equal to that of a high-density magnetic bubble memory. Hard-disk storage costs about 100 times less per bit than semiconductor storage and about 10 times less than bubble storage.

Access time for disks is about 100,000 times longer than that for comparable solid-state memories. However, it is fast enough for real-time processing. The hard disks come in 5.25-, 8-, and 14-inch diameters and contain 100 to 300 Mbytes. The small disks fit well

into small computers.

The standard floppy disk has a diameter of 8 inches, and the minifloppy has a 5.25-inch diameter. Full floppies contain up to 10 Mbytes on 80 tracks. Double-sided minifloppies have up to 2 Mbytes.

Video disks are storage devices that can store hundreds of millions of characters. Users have long sought to harness this immense storage capacity. Success is now imminent with available interfaces that place these disks under computer control.

Video disks exist with 50,000 Mbytes of storage per side—equivalent to 54,000 pages of information. The video-disk interface is available in RS-232-C or IEEE-488-bus-based versions. A typical configuration includes the interface, a microcomputer, a video-disk player, and a television set. Through the computer's keyboard, a user can access any digital information stored on the disk. Average access time is 1 second.

Enabling the 54,000-page capacity to be stored on a disk is a recording technique called "constant angular velocity." Another technique, "constant linear velocity," allows about 108,000 pages to be stored per side.

Magnetic bubble memories provide compact, nonvolatile, high-capacity data storage. They are reliable (low data-error rate and low component-failure rate), function in harsh environments (inherent in solid-state components), and have few routine maintenance requirements (expected to be a crucial issue in the automated office) and minimal downtime (less lost time and increased productivity). These features are particularly useful for industrial control, avionics and military areas, geophysical instruments, factory automation, and portable instruments. Bubble memories also operate as nonvolatile file storage for point-of-sale and graphics terminals, for voice synthesis/response systems, and as loading devices for CBX systems.

Because of its nonvolatile, mass-storage capability, one magnetic bubble memory was designed into a portable writing/editing terminal used for reporter/newsroom communications. This terminal has an alphanumeric keyboard, stores from 30 to 256 kbytes on the bubble, and has a 5-inch CRT display with 16 lines of text. It communicates via dial-up phone lines through an acoustically coupled modem at speeds up to 300 bit/s. An auxiliary communications port (RS-232-C, RS-449/423) allows data-transfer rates of up to 9.6 kbit/s, and a printer is also available. The briefcase-sized terminal weighs under 15 pounds. ■

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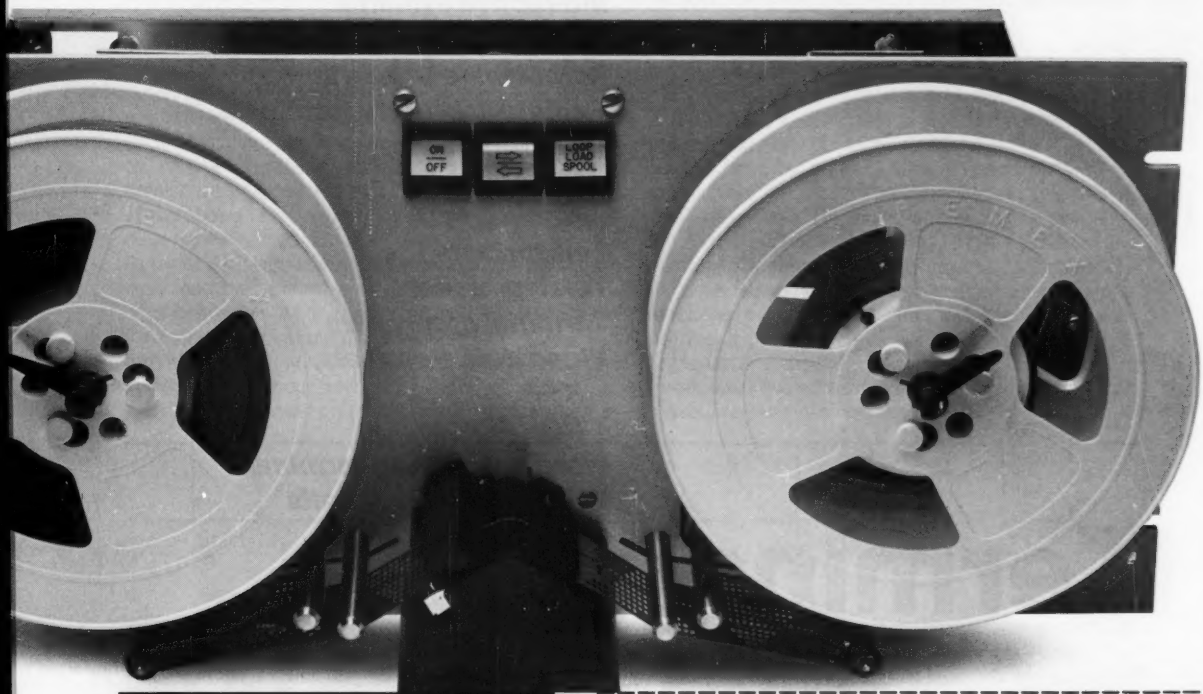

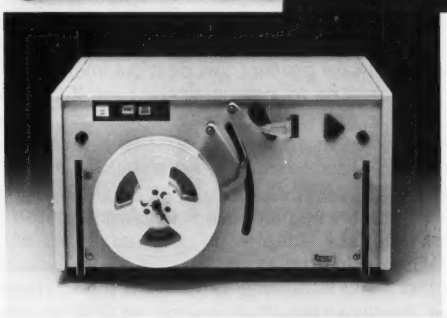

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Terminals

The "dumb" terminal is becoming a thing of the past. This is due not as much to the relative inexpensiveness of processor intelligence as to the increased terminal processing necessary to efficiently participate in today's complex data communications networks. The dumber the terminal, the more the terminal operator must do—and current trends are definitely toward ease of terminal operation. Subsequently, considerable intelligence, even if only for communications handling, is being added.

The proliferation of diverse terminal protocols over the last decade is slowing down—at least based on recently announced products. There are two general areas of standardization toward which most terminal vendors are migrating. One is X.25, which is being implemented by the public packet networks, and the other is the de facto IBM standards (particularly SNA/SDLC). The two are not wholly dissimilar, however, and several major terminal vendors now provide communications packages that support both to some degree (see "An overview of terminal protocols").

To illustrate the relative similarity between the X.25 protocol and the bit-oriented SDLC of IBM's systems network architecture (SNA), IBM itself announced a standard software product this past summer that permits SNA devices to communicate over X.25-based public packet networks. In essence, the software logically associates, or maps, SNA sessions with their X.25 counterparts—virtual circuits. An attractive aspect of IBM's X.25 support is that existing SNA terminal devices need not be modified. A black box, called the network interface adapter, is required, however, at each DTE-DCE interface.

Another trend in terminal products is the increase in add-on components that permit otherwise dumb devices to function like their intelligent successors. For example, terminals without any local storage can take advantage of T-Bar's Explorer Data Compression Recorder, a $9,000 diskette unit that records and transmits data files entered at the dumb terminal. In

An overview of terminal protocols

Bit and byte boundaries have to be recognized on an incoming data stream to permit character assembly. Bit synchronization allows the line sampling at the appropriate rate and times in order to sense binary 1s and 0s correctly. Byte synchronization enables the framing of serial data into characters. The lack of an accurate bit-synchronization signal from the transmitter to the receiver distinguishes asynchronous and synchronous communications. In asynchronous communications (Fig. 1A), the receiver clocks data from a local clock whose frequency is set approximately at the known transmitter frequency. Framing occurs when the receiver recognizes a start bit at the beginning and one or more stop bits at the end of each character.

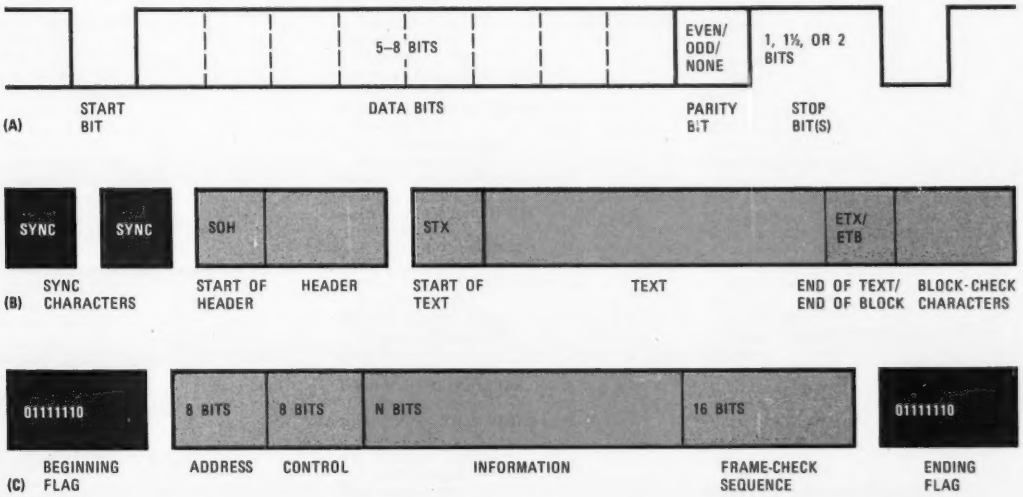
Synchronous communications requires the transmission of a bit-synchronization signal, either encoded within the data stream or in parallel to it. Special synchronous characters that cannot be confused with any bit pattern in the data stream are used for byte synchronization. Framing information for each character can be dispensed with, since the presence of a precise synchronization signal keeps the bit stream synchronized considerably longer than in asynchronous communications.

Byte- and bit-synchronous protocols. Although both byte- and bit-types of protocols use special synchronous characters at the beginning and end of a frame for byte-synchronization, the technique of formatting the frame distinguishes byte-synchronous protocols from bit-synchronous ones.

Byte-synchronous protocols use explicit frame-formatting information in the form of control characters to delineate the various message fields. For example, IBM's bisync protocol, shown in Figure 1B, uses special characters to indicate start-of-header, start-of-text, and end-of-text. These characters are predefined in popular character-set codes such as ASCII and EBCDIC. In addition, the bisync protocol requires the inclusion of cyclic-redundancy-check characters.

The use of special characters requires the receiving station to be able to identify them in the incoming data stream. Confusion may result from the incorrect recognition of a control bit pattern if it occurs unintentionally. In byte-synchronous protocols, transparency to the control characters is obtained either through character count or by prefixing data characters that have the control characters' bit pattern with another special control character.

Bit-synchronous protocols overcome the transparency problem by keeping the control information minimal and implicit. SDLC, for example (Fig. 1C), always requires an 8-bit address field, followed by an 8-bit control field and is, in turn, followed by the 2-byte frame-check field. Beginning and ending synchronization flags—predefined to be 01111110—sandwich the message. To prevent the flags from being unintentionally detected within the message, the transmitter prevents the occurrence of each flag's bit pattern by inserting a 0 after each sequence of five 1s detected. At the destination, the receiver automatically deletes a 0 after every five consecutive 1s detected. This method is called zero-bit insertion and deletion.



another variation of the same theme, Northern Telecom introduced its Intelligent Remote Input Stand (IRIS), an add-on unit for IBM Models 50, 60, and 75 electronic typewriters. The $1,600 unit permits up to 16 kbytes of data to be stored locally and transmitted, by the operator, using an integrated 300-bit/s modem.

Besides add-on devices for data storage, dozens of products have been announced over the past year, affording greater communications capabilities and flexibility for the terminal operator. Most are in the form of black boxes, which typically perform protocol conversions, allowing the dumb terminal to appear to a

remote host like a sophisticated distributed processing device.

Use of these protocol converters and emulators is one way to attack terminal-to-terminal and terminal-to-host incompatibilities, but another way—often cheaper and frequently more efficient—is via software. This presupposes, of course, that the terminal device has some sort of intelligence, which is not always the case. With dumb terminals, the handling of complex communications protocols is sometimes accomplished with an add-on circuit board that executes firmware-based programs. With memory still getting cheaper, terminals are gaining more and more communications sophistication. In fact, the line of distinction that separates intelligent terminals from desktop terminals, or microcomputers, is becoming increasingly fuzzy.

Integrated function

Several recent product introductions purport to consolidate several terminals, each with a different function, into a single, multifunction device. For example, Panfax Corporation, of Woodbury, N.Y., introduced a digital facsimile machine capable of receiving and printing data streams, as well as facsimile. The MV-3000, costing between $7,000 and $9,000, essentially integrates a receive-only data terminal with a facsimile machine, taking advantage of the common processing and communications components of both.

Another trend, exhibited by an increasing number of product releases, is toward digitized-voice input and output. A $4,000 voice-input device from Heuristics Inc., of Sunnyvale, Calif., for example, recognizes a vocabulary of 128 words and converts the voice into a digital, machine-readable format. Similarly, a voice-output unit from Micro Comm Inc., of Mobile, Ala., costing $1,500, permits up to a 200-word vocabulary, inputted in conventional data codes such as ASCII or EBCDIC, outputted in synthesized voice. ■

For more on terminals, see the following DATA COMMUNICATIONS articles:

1. "Making machines talk: Simulated speech," Ira Cotton, January 1981, p. 75, and February 1981, p. 101. This two-part series addresses the implementation and impact of digitized-voice I/O and transmission.

2. "Minicomputers' network roles," Edwin E. Mier, October 1980, p. 77. This analysis of the communications capabilities of minis, micros, and intelligent terminals focuses on protocol incompatibilities and their resolution.

3. "Analyzing IBM 3270 performance on satellite links," George Deaton and David Franse, October 1980, p. 117. What every 3270 user ought to know before considering satellite links as a transmission facility.

4. "A synchronous ticket to packet networks," Sheldon Fox, Anthony Lavia, Kanichi Kawaguchi, August 1980, p. 113. The story of interface standardization among several nations' packet carriers.

AUDIO RESPONSE UNITS

Arts Computer Products Inc
Boston, MA
ASI Teleprocessing
Watertown, MA
Centigram Corp
Sunnyvale, CA
Cincinnati Bell
Cincinnati, OH
Cognitronics Corp
Stamford, CT
Engineered Systems Inc
Omaha, NE
Hitachi America Ltd
Doraville, GA
Infolink Corp
North Brook, IL
Interface Technology Inc
St Louis, MO
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Master Specialties Co
Costa Mesa, CA
Perception Technology Corp
Winchester, MA
Periphonics Corp
Bohemia, NY
Phone 1 Inc
Loves Park, IL
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
Triformation Systems Inc
Stuart, FL
Votrax Div
Federal Screw Works
Troy, MI

BADGE READERS

W A Brown Instruments
Orlando, FL
Coastal Data Products
Miami, FL
Comtek Inc
San Antonio, TX
Digital Equipment Corporation
Maynard, MA
Four-Phase Systems Inc
Cupertino, CA
General Automation
Anaheim, CA
Hewlett-Packard Co
Palo Alto, CA
Identification Systems Inc
Acton, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Mepcom International
Dallas, TX
NCR Corp
Dayton, OH
Phone 1 Inc
Loves Park, IL
Rusco Electronic Systems
Glendale, CA
Schlage Electronics
Santa Clara, CA
TEC Inc
Tucson, AZ

BAR CODE READERS

COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
Ames Colorfile Corp
Div Ames Safety Envelope Company
Somerville, MA
Amtek Business Machines, Inc
Santa Clara, CA
Azurdata Inc
Redmond, WA
Bedford Computer Systems Inc, a div of
Distributed Systems Corp
Westford, MA
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinatti Electronics Corp
Cincinatti, OH
Cincinnati Bell
Cincinnati, OH
Cognitronics Corp
Stamford, CT
Computer Devices Inc
Burlington, MA
Comtec Information Systems Inc
Cumberland, RI
Digital Equipment Corporation
Maynard, MA
Hewlett-Packard Co
Palo Alto, CA
Interface Mechanisms Inc
Lynnwood, WA
The David Jamison Carlyle Corp
Los Angeles, CA
Mannesmann Tally
Kent, WA
Mepcom International
Dallas, TX
NCR Corp
Dayton, OH
Sperry Univac
Blue Bell, PA

BATCH TERMINALS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
Alphamatrix Inc
Feasterville, PA
American Computer Group Inc
Boston, MA
American Terminal Leasing Co
Boston, MA
AM Jacquard Systems
Santa Monica, CA
Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Digital Data Systems Inc
Hauppauge, NY
Applied Systems Corp
St Claire Shores, MI
AT&T
Morris Plains, NJ
BMS Data Handling Inc
Riverside, CA
Boston Financial & Equity Corp
Boston, MA
The Braegen Corp
Cupertino, CA
Burroughs Corp
Detroit, MI
Cado Systems Corp
Torrance, CA
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
Computer Devices Inc
Burlington, MA
Comtec Information Systems Inc
Cumberland, RI
Comtek Inc
San Antonio, TX
Control Data Corp
Minneapolis, MN
Data Dimensions Inc
Norwalk, CT
Datapoint Corporation
San Antonio, TX
Data Printer Corp
Malden, MA
Decision Data Computer Corp
Horsham, PA
Delta Data Systems
Trevose, PA
Digilog Business Systems Inc
Horsham, PA
Durango Systems Inc
San Jose, CA
Electro Rent
Burbank, CA
Four-Phase Systems Inc
Cupertino, CA
General Automation
Anaheim, CA
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
IESI Inc
Seattle, WA
Leasametric
Foster City, CA
Local Data
Torrance, CA
MFE Corp
Salem, NH
Microdata Corporation
Irvine, CA
Mitron Systems Corp
Columbia, MD
Mohawk Data Sciences Corp
Parsippany, NJ
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Northern Telecom Inc Electronic Office
Systems
Minneapolis, MN
Paradyne Corp
Largo, FL
Pertec Computer Corp
Los Angeles, CA
Qytel
New York, NY
Radian Corp-Unitech Products
Austin, TX
Sperry Univac
Blue Bell, PA
Sperry Univac, MCO
Irvine, CA
Standard Engineering
Fremont, CA
Sykes Datatronics
Rochester, NY
Tab Products Co
Palo Alto, CA

Techtran Industries
Rochester, NY
TEC Inc
Tucson, AZ
Tele-Data Inc
Miami, FL
Texas Instruments Digital Systems Group
Houston, TX
Wang Laboratories Inc
Lowell, MA
Xycom Corp
Saline, MI

DATA ENTRY TERMINALS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Acro Corporation
Irvine, CA
Alanthus Data Communications Corp
Rockville, MD
Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Dynamics International
Ann Arbor, MI
AT&T
Morris Plains, NJ
Automated Equipment Inc
Fountain Valley, CA
Aydin Controls
Ft Washington, PA
BMS Data Handling Inc
Riverside, CA
W A Brown Instruments
Orlando, FL
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
Cado Systems Corp
Torrance, CA
Caere Corp
Los Gatos, CA
Cal Data Lease
Anaheim, CA
Carterfone Communications Corp
Dallas, TX
Centigram Corp
Sunnyvale, CA
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinatti Electronics Corp
Cincinatti, OH
Coastal Data Products
Miami, FL
Codex Corporation
Mansfield, MA
Cognitronics Corp
Stamford, CT
Compuscan Inc
Teterboro, NJ
Computek Inc
Burlington, MA
Computer Communications Inc
Torrance, CA
Computerized Restaurant Systems, Inc
Anaheim, CA
Computer Transceiver Systems Inc
Paramus, NJ
Comtec Information Systems Inc
Cumberland, RI
Comtek Inc
San Antonio, TX
Consolidated Computer International Inc
Phoenix, AZ
Control Concepts
Div of Presearch Inc
Arlington, VA
Data General Corporation
Westboro, MA
Datamedia Corp
Pennsauken, NJ
Datapoint Corporation
San Antonio, TX
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Data Science
Redwood City, CA
Data Terminals & Communications
Campbell, CA
DCD Telecommunications
Mansfield, MA
Delta Data Systems
Trevose, PA
Diablo Systems Inc A Xerox Co
Hayward, CA
Digilog Business Systems Inc
Horsham, PA
Digital Datacom Inc
Laguna Niguel, CA
Direct Inc
Sunnyvale, CA
Electromagnetic Sciences Inc
Norcross, GA
Electro Rent
Burbank, CA
Emulog Inc
Fremont, CA
Envax Corporation
Irving, TX
E-Systems Inc
ECI Div
St Petersburg, FL
Facit Inc
Greenwich, CT
Falco Data Products
Sunnyvale, CA
Four-Phase Systems Inc
Cupertino, CA
General Automation
Anaheim, CA
General Telephone Co of the Northwest
Everett, WA
General Terminal Corp
Tustin, CA
Gould Modicon Div
Andover, MA
GR Electronics Ltd.
Santa Monica, CA
Harris Corp
Composition Systems Div
Melbourne, FL
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Hendrix
Manchester, NH
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Information Control Corp
LA, CA
Information Technology Inc
Needham, MA
Innovative Electronics Inc
Miami Lakes, FL
Intelligent Systems Corp
Norcross, GA
Interface Technology Inc
St Louis, MO
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
Kurzweil Computer Products
Cambridge, MA
Lane Telecommunications
Rolling Hills Estates, CA
Leading Edge Inc.
Canton, MA
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Leasametric
Foster City, CA
Manufacturing Data Systems Inc
Ann Arbor, MI
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Cupertino, CA
Mepcom International
Dallas, TX
Microdata Corporation
Irvine, CA
Micro-Term Inc
St Louis, MO
Mohawk Data Sciences Corp
Parsippany, NJ
NCR Corp
Dayton, OH
Northern Telecom Inc Electronic Office Systems
Minneapolis, MN
Ontel Corp
Woodbury, NY
Paradyne Corp
Largo, FL
Periphonics Corp
Bohemia, NY
Pertec Computer Corp
Los Angeles, CA
Phone 1 Inc
Loves Park, IL
Piiceon Inc
Intelligent Systems Div
San Jose, CA
Plessy Peripheral Systems
Irvine, CA
Prime Computer Inc
Natick, MA
Qume Corp
San Jose, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Radian Corp-Unitech Products
Austin, TX
Raytheon Data Systems
Norwood, MA
RCA Solid State
Microcomputer Products Div
Lancaster, PA
Rusco Electronic Systems
Glendale, CA
Selecterm Inc
Wakefield, MA
Sperry Univac, MCO
Irvine, CA
Standard Engineering
Fremont, CA
Sykes Datatronics
Rochester, NY
Syscom Inc
Sunnyvale, CA

Systems Research Inc
Okemos, MI
Tab Products Co
Palo Alto, CA
TEC Inc
Tucson, AZ
Tektronix Inc
Beaverton, OR
Telcon Industries
Fort Lauderdale, FL
Televideo Systems Inc
Sunnyvale, CA
Telex Computer Products Inc
Tulsa, OK
Termiflex Corp
Nashua, NH
Terminal Data Corp
Rockville, MD
Texas Instruments Digital Systems Group
Houston, TX
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
Trans-Lux Corp
Norwalk, CT
TransNet Corp
Union, NJ
The TRW-Fujitsu Co
Los Angeles, CA
Tymnet Inc
Cupertino, CA
Visual Technology Inc
Tewksbury, MA
Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
Upper Saddle River, NJ
Xerox Corporation
Stamford, CT
Zenith Data Systems
Glenview, IL
Zitel Corp
San Jose, CA

DIGITAL PLOTTERS

Benson Inc
Mountain View, CA
California Computer Products Inc
Anaheim, CA
Compumart
Cambridge, MA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Data Technology Inc
Boston, MA
Electro Rent
Burbank, CA
E-Systems Inc
ECI Div
St Petersburg, FL
Florida Data Corp
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Houston Instrument
Austin, TX
ID Systems Corp
Hilliard, OH
Leasametric
Foster City, CA
Manufacturing Data Systems Inc
Ann Arbor, MI
Nicolet Zeta Corp
Concord, CA
Rental Electronics Inc
Palo Alto, CA
Science Accessories Corp
Southport, CT
Selanar Corp
Santa Clara, CA
Singer Co
Librascope Div
Glendale, CA
Standard Engineering
Fremont, CA
Tektronix Inc
Beaverton, OR
Versatec Inc, A Xerox Company
Santa Clara, CA
Wang Laboratories Inc
Lowell, MA
Xerox Corporation
Stamford, CT

FACSIMILE TERMINALS

Alden Electronic & Impulse
Recording Equipment Co Inc
Westboro, MA
Burroughs Corp
Detroit, MI
E-Systems Inc
Garland Div
Garland, TX
Exxon Office Systems Co
Stamford, CT
Hitachi America Ltd
Doraville, GA
Muirhead Inc
Mountainside, NJ
Panafax Corp
Woodbury, NY
Rapicom Inc
Fairfield, NJ
Siemens Corp
Iselin, NJ
SP-DMS
McLean, VA
Telautograph Corporation
Los Angeles, CA
3M Co
Business Communications Products
St Paul, MN
Ultramation
Syracuse, NY
Xerox Corp
Office Products Div
Dallas, TX
Xerox Corporation
Stamford, CT

GRAPHIC DISPLAY TERMINALS

DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
ABW Corp
Ann Arbor, MI
Acro Corporation
Irvine, CA
Adage Inc
Billerica, MA
Advanced Electronics Design Inc
Sunnyvale, CA
Alden Electronic & Impulse
Recording Equipment Co Inc
Westboro, MA
Amtek Business Machines, Inc
Santa Clara, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Dynamics International
Ann Arbor, MI
Applied Systems Corp
St Claire Shores, MI
Auto-Trol Technology Corp
Denver, CO
Aydin Computer Systems
Ft Washington, PA
Aydin Controls
Ft Washington, PA
Boston Financial & Equity Corp
Boston, MA
W A Brown Instruments
Orlando, FL
Cal Data Lease
Anaheim, CA
California Computer Products Inc
Anaheim, CA
Chess
Denver, CO
CHI Corp
Cleveland, OH
Columbia Data Products
Columbia, MD
Compumart
Cambridge, MA
Computek Inc
Burlington, MA
Computer Transceiver Systems Inc
Paramus, NJ
Comtal Corp
Pasadena, Altadena
Conrac Corp
Data Products Dept
Covina, CA
Continental Resources Inc
Bedford, MA
Control Data Corp
Minneapolis, MN
Costronics Electronic
Hillington, Middlesex,
United Kingdom
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Data General Corporation
Westboro, MA
Datamedia Corp
Pennsauken, NJ
Data Technology Inc
Boston, MA
DeAnza Systems Inc
San Jose, CA
Digital Equipment Corporation
Maynard, MA
Electro Rent
Burbank, CA
E-Systems Inc
Garland Div
Garland, TX
Fernseh Inc
Salt Lake City, UT
First Computer Corp
Westmont, IL
General Electric — Video Display
Syracuse, NY
General Terminal Corp
Tustin, CA
Genisco Computers Corporation
Costa Mesa, CA
Goodwood Data Systems
Carleton Pl, ON
Canada
Harris Corp
Composition Systems Div
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
IDE Corp
Cleveland, OH
ID Systems Corp
Hilliard, OH
Imlac Corp
Needham, MA
Industrial Data Terminals Corp
Westerville, OH
Intelligent Systems Corp
Norcross, GA
Interstate Electronics Corp
Anaheim, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Lear Siegler Inc/
Data Products Div
Anaheim, CA

Leasametric
Foster City, CA
Lexicon Inc
Waltham, MA
Lexidata Corp
Billerica, MA
Lundy Electronics & Systems Inc
Glen Head, NY
Manufacturing Data Systems Inc
Ann Arbor, MI
Megatek
San Diego, CA
Micro-Term Inc
St Louis, MO
Perkin-Elmer
Oceanport, NJ
PolyMorphic Systems
Santa Barbara, CA
Qytel
New York, NY
Ramtek Corp
Santa Clara, CA
Rental Electronics Inc
Palo Alto, CA
SAI Technology Co
San Diego, CA
Sanders Associates Inc
Nashua, NH
Science Accessories Corp
Southport, CT
Selanar Corp
Santa Clara, CA
Singer Co
Librascope Div
Glendale, CA
Soroc Technology Inc
Anaheim, CA
Standard Engineering
Fremont, CA
Tab Products Co
Palo Alto, CA
TEC Inc
Tucson, AZ
Tektronix Inc
Beaverton, OR
TransNet Corp
Union, NJ
Unicom Computer Corporation
Sausalito, CA
Vector Automation
Baltimore, MD
Wang Laboratories Inc
Lowell, MA

PROGRAMMABLE TERMINALS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/
COMMUNICATION EQUIPMENT
LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Adage Inc
Billerica, MA
Alanthus Data Communications Corp
Rockville, MD
American Computer Group Inc
Boston, MA
American Satellite Company
Rockville, MD
American Terminal Leasing Co
Boston, MA
AM Jacquard Systems
Santa Monica, CA
Ampex Corp
Memory Products Div
El Segundo, CA
Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Applied Digital Data Systems Inc
Hauppauge, NY
Applied Systems Corp
St Claire Shores, MI
Artelonics Corp, Affiliate of Shell
Canada Ltd
Santa Clara, CA
Automated Equipment Inc
Fountain Valley, CA
Aydin Computer Systems
Ft Washington, PA
Aydin Controls
Ft Washington, PA
Azurdata Inc
Redmond, WA
Beehive International
Salt Lake City, UT
Boston Financial & Equity Corp
Boston, MA
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
Cado Systems Corp
Torrance, CA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinatti Electronics Corp
Cincinatti, OH
Coastal Data Products
Miami, FL
Codex Corporation
Mansfield, MA
Columbia Data Products
Columbia, MD
Comark Corp
Waltham, MA
Compal Inc
Beverly Hills, CA
Compuscan Inc
Teterboro, NJ
Computek Inc
Burlington, MA
Computer Automation
Naked Mini Div
Irvine, CA
Computer Communications Inc
Torrance, CA
Computer Devices Inc
Burlington, MA
Computerized Restaurant Systems, Inc
Anaheim, CA
Computer-Link Corp
Burlington, MA
Comtal Corp
Pasadena, Altadena
Comtec Information Systems Inc
Cumberland, RI
Comtek Inc
San Antonio, TX
Consolidated Computer International Inc
Phoenix, AZ
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data General Corporation
Westboro, MA
Datamedia Corp
Pennsauken, NJ
Datapoint Corporation
San Antonio, TX
Data Rentals/Sales Inc
Culver City, CA
Dataroyal
Nashua, NH
Data Terminals & Communications
Campbell, CA
Datatrol Inc
Hudson, MA
Datavue Corp
Seattle, WA
Delta Data Systems
Trevose, PA
Diablo Systems Inc A Xerox Co
Hayward, CA
Digilog Business Systems Inc
Horsham, PA
Digilog Inc
Horsham, PA
Digital Equipment Corporation
Maynard, MA
Digital Systems Div
Dahlberg Electronics Inc
Minneapolis, MN
Direct Inc
Sunnyvale, CA
Durango Systems Inc
San Jose, CA
ECS Microsystems
San Jose, CA
Electro Rent
Burbank, CA
Envax Corporation
Irving, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
Garland Div
Garland, TX
Extel Corp.
Northbrook, IL
Four-Phase Systems Inc
Cupertino, CA
General Automation
Anaheim, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of Kentucky
Lexington, KY
General Terminal Corp
Tustin, CA
Genisco Computers Corporation
Costa Mesa, CA
GNAT Computers, Inc.
San Diego, CA
Goodwood Data Systems
Carleton Pl, ON
Canada
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Heath Co
Benton Harbor, MI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
IESI Inc
Seattle, WA
Imlac Corp
Needham, MA

Information Technology Inc
Needham, MA
Intelligent Systems Corp
Norcross, GA
Interstate Electronics Corp
Anaheim, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Lane Telecommunications
Rolling Hills Estates, CA
Leading Edge Inc.
Canton, MA
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Leasametric
Foster City, CA
Lexicon Inc
Waltham, MA
Lundy Electronics & Systems Inc
Glen Head, NY
Mannesmann Tally
Kent, WA
Microdata Corporation
Irvine, CA
Micro-Term Inc
St Louis, MO
Mohawk Data Sciences Corp
Parsippany, NJ
Motorola Semiconductor Prod
Phoenix, AZ
MTI Sales Corp
Great Neck, NY
NCR Corp
Dayton, OH
NEC Information Systems Inc
Lexington, MA
Northern Telecom Inc Electronic Office Systems
Minneapolis, MN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Novell Data Systems Inc
Orem, UT
Nu Data Corp
Little Silver, NJ
Ontel Corp
Woodbury, NY
Periphonics Corp
Bohemia, NY
Perkin-Elmer
Oceanport, NJ
Pertec Computer Corp
Los Angeles, CA
Piiceon Inc
Intelligent Systems Div
San Jose, CA
Qume Corp
San Jose, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Radian Corp-Unitech Products
Austin, TX
Ramtek Corp
Santa Clara, CA
Raytheon Data Systems
Norwood, MA
RCA Service Co
Data Services
Cherry Hill, NJ
Rental Electronics Inc
Palo Alto, CA
SAI Technology Co
San Diego, CA
Sanders Associates Inc
Nashua, NH
Selecterm Inc
Wakefield, MA
Sidereal Corp
Portland, OR
Singer Co
Librascope Div
Glendale, CA
Soroc Technology Inc
Anaheim, CA
Southern Telephone Supply
Atlanta, GA
Sperry Univac
Blue Bell, PA
Sperry Univac, MCO
Irvine, CA
Standard Engineering
Fremont, CA
Sykes Datatronics
Rochester, NY
Syscom Inc
Sunnyvale, CA
Systems Research Inc
Okemos, MI
Tab Products Co
Palo Alto, CA
Techtran Industries
Rochester, NY
TEC Inc
Tucson, AZ
Tektronix Inc
Beaverton, OR
Tele-Data Inc
Miami, FL
Teleray Div
Research Inc
Minneapolis, MN
Televideo Systems Inc
Sunnyvale, CA
Termiflex Corp
Nashua, NH
Terminal Data Corp
Rockville, MD
Terminal Rentals Inc
Orange, CA
Texas Instruments Digital Systems Group
Houston, TX
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
TransNet Corp
Union, NJ
Triformation Systems Inc
Stuart, FL
The TRW-Fujitsu Co
Los Angeles, CA
Vector Automation
Baltimore, MD
Vector Graphic Inc
Westlake Village, CA
Wang Laboratories Inc
Lowell, MA
Xerox Corporation
Stamford, CT
Xycom Corp
Saline, MI
Zenith Data Systems
Glenview, IL
Zentec
Santa Clara, CA

INTERACTIVE TERMINALS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/
COMMUNICATION EQUIPMENT
LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
RACAL-MILGO
Miami, FL . . . . . ADV PG 43

Acro Corporation
Irvine, CA
Adage Inc
Billerica, MA
Ampex Corp
Memory Products Div
El Segundo, CA
Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Digital Data Systems Inc
Hauppauge, NY
Applied Dynamics International
Ann Arbor, MI
AT&T
Morris Plains, NJ
Auto-Trol Technology Corp
Denver, CO
Aydin Computer Systems
Ft Washington, PA
Aydin Controls
Ft Washington, PA
Bedford Computer Systems Inc, a div of Distributed Systems Corp
Westford, MA
Beehive International
Salt Lake City, UT
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
Cablebus Systems Corp
Beaverton, OR
Cado Systems Corp
Torrance, CA
California Computer Products Inc
Anaheim, CA
Carroll Manufacturing
Champaign, IL
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinatti Electronics Corp
Cincinatti, OH
Codex Corporation
Mansfield, MA
Columbia Data Products
Columbia, MD
Compal Inc
Beverly Hills, CA
Complete Computer Systems
Horsham, PA
Compumart
Cambridge, MA
CompuMed Systems Inc
Los Angeles, CA
Compuscan Inc
Teterboro, NJ
Computer Automation
Naked Mini Div
Irvine, CA
Computer Datacom Inc
Irvine, CA
Computer Devices Inc
Burlington, MA
Computerized Restaurant Systems, Inc
Anaheim, CA
Computer-Link Corp
Burlington, MA
Computer Transceiver Systems Inc
Paramus, NJ
Comtal Corp
Pasadena, Altadena
Comtek Inc
San Antonio, TX
Consolidated Computer International Inc
Phoenix, AZ
Continental Resources Inc
Bedford, MA
Data Equipment Inc
Sunnyvale, CA

Data General Corporation
Westboro, MA
DatagraphiX Inc
San Diego, CA
Datamedia Corp
Pennsauken, NJ
Datapoint Corporation
San Antonio, TX
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Dataroyal
Nashua, NH
Data Technology Inc
Boston, MA
Datatrol Inc
Hudson, MA
DCD Telecommunications
Mansfield, MA
Delta Data Systems
Trevose, PA
Diablo Systems Inc A Xerox Co
Hayward, CA
Di-An Controls Inc
Boston, MA
Digital Equipment Corporation
Maynard, MA
Direct Inc
Sunnyvale, CA
DMC Systems Inc
Santa Clara, CA
Durango Systems Inc
San Jose, CA
Electro Rent
Burbank, CA
Emulog Inc
Fremont, CA
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Evans & Sutherland Computer Corp
Salt Lake City, UT
Falco Data Products
Sunnyvale, CA
Four-Phase Systems Inc
Cupertino, CA
Gamma Technology Inc
Palo Alto, CA
General Automation
Anaheim, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of the Northwest
Everett, WA
General Terminal Corp
Tustin, CA
Genisco Computers Corporation
Costa Mesa, CA
Goodwood Data Systems
Carleton Pl, ON
Canada
Gould Modicon Div
Andover, MA
GTE Telenet Communications Corp
Vienna, VA
Harris Corp
Composition Systems Div
Melbourne, FL
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
IESI Inc
Seattle, WA
Imlac Corp
Needham, MA
Information Technology Inc
Needham, MA
Intelligent Systems Corp
Norcross, GA
Interactive Systems Corp
Santa Monica, CA
Interface Systems Inc
Ann Arbor, MI
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
Los Angeles, CA
Kurta Corp
Tempe, AZ
Leading Edge Inc.
Canton, MA
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Leasametric
Foster City, CA
Lee Data Corp
Eden Prairie, MN
Lundy Electronics & Systems Inc
Glen Head, NY
Mannesmann Tally
Kent, WA
Manufacturing Data Systems Inc
Ann Arbor, MI
MDS/Trivex
Costa Mesa, CA
Megatek
San Diego, CA
Memorex Corp Communications Group
Cupertino, CA
Mepcom International
Dallas, TX
Microdata Corporation
Irvine, CA
Mohawk Data Sciences Corp
Parsippany, NJ
NCR Corp
Dayton, OH
NEC Information Systems Inc
Lexington, MA
Northern Telecom Inc Electronic Office Systems
Minneapolis, MN
Novell Data Systems Inc
Orem, UT
Nu Data Corp
Little Silver, NJ
Ontel Corp
Woodbury, NY
Panafax Corp
Woodbury, NY
Perkin-Elmer
Oceanport, NJ
Pertec Computer Corp
Los Angeles, CA
Piiceon Inc
Intelligent Systems Div
San Jose, CA
Plessy Peripheral Systems
Irvine, CA
PolyMorphic Systems
Santa Barbara, CA
Prime Computer Inc
Natick, MA
Qytel
New York, NY
Racal-Milgo
Miami, FL
Ramtek Corp
Santa Clara, CA
RCA Solid State
Microcomputer Products Div
Lancaster, PA
SAI Technology Co
San Diego, CA
Sanders Associates Inc
Nashua, NH
Selanar Corp
Santa Clara, CA
Selecterm Inc
Wakefield, MA
Sidereal Corp
Portland, OR
Siemens Corp
Iselin, NJ
Singer Co
Librascope Div
Glendale, CA
Sperry Univac
Blue Bell, PA
Sperry Univac, MCO
Irvine, CA
Standard Engineering
Fremont, CA
Sykes Datatronics
Rochester, NY
Syscom Inc
Sunnyvale, CA
Tab Products Co
Palo Alto, CA
Tandem Computers
Cupertino, CA
TEC Inc
Tucson, AZ
Tektronix Inc
Beaverton, OR
Teldata Systems Corp
NY, NY
Teleray Div
Research Inc
Minneapolis, MN
Televideo Systems Inc
Sunnyvale, CA
Telex Computer Products Inc
Tulsa, OK
Termiflex Corp
Nashua, NH
Texas Instruments Digital Systems Group
Houston, TX
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
TransNet Corp
Union, NJ
Trendata/Standard Memories
Santa Ana, CA
The TRW-Fujitsu Co
Los Angeles, CA
Visual Technology Inc
Tewksbury, MA
Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
Upper Saddle River, NJ
Xerox Corporation
Stamford, CT
Zitel Corp
San Jose, CA

POINT OF SALE TERMINALS

Ampex Corp
Memory Products Div
El Segundo, CA
Amtek Business Machines, Inc
Santa Clara, CA
CHI Corp
Cleveland, OH
Computerized Restaurant Systems, Inc
Anaheim, CA
Datatrol Inc
Hudson, MA
DMC Systems Inc
Santa Clara, CA
FasFax
Nashua, NH

General Instrument Business Systems Div
Hunt Valley, MD
Hawaiian Telephone Co
Honolulu, HI
The David Jamison Carlyle Corp
Los Angeles, CA
Lane Telecommunications
Rolling Hills Estates, CA
Mepcom International
Dallas, TX
Micro-Term Inc
St Louis, MO
NCR Corp
Dayton, OH
Standard Engineering
Fremont, CA
Termiflex Corp
Nashua, NH
Texas Instruments Digital Systems Group
Houston, TX
Tymnet Inc
Cupertino, CA

PORTABLE DATA ENTRY TERMINALS

COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
Alanthus Data Communications Corp
Rockville, MD
Applied Systems Corp
St Claire Shores, MI
Azurdata Inc
Redmond, WA
C & L Terminals Inc
Portland, OR
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Computer Devices Inc
Burlington, MA
Computer Transceiver Systems Inc
Paramus, NJ
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Control Concepts
Div of Presearch Inc
Arlington, VA
Data Access Systems Inc
Blackwood, NJ
Data General Corporation
Westboro, MA
Datamedia Corp
Pennsauken, NJ
Data Rentals/Sales Inc
Culver City, CA
Digilog Inc
Horsham, PA
Digital Datacom Inc
Laguna Niguel, CA
Electromagnetic Sciences Inc
Norcross, GA
Electro Rent
Burbank, CA
Findex Inc
Torrance, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of the Northwest
Everett, WA
Gould Modicon Div
Andover, MA
GR Electronics Ltd.
Santa Monica, CA
GTE Telenet Communications Corp
Vienna, VA
Hawaiian Telephone Co
Honolulu, HI
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
IDE Corp
Cleveland, OH
IESI Inc
Seattle, WA
Information Technology Inc
Needham, MA
Interface Technology Inc
St Louis, MO
The David Jamison Carlyle Corp
Los Angeles, CA
Leasametric
Foster City, CA
Mannesmann Tally
Kent, WA
Mepcom International
Dallas, TX
Modular Computer Systems
Fort Lauderdale, FL
MSI Data Corp
Costa Mesa, CA
MTI Sales Corp
Great Neck, NY
Nu Data Corp
Little Silver, NJ
Quint Systems Inc
Northbrook, IL
Qytel
New York, NY
Rental Electronics Inc
Palo Alto, CA
Selecterm Inc
Wakefield, MA
Singer Co
Librascope Div
Glendale, CA
South Central Bell Telephone Co
Birmingham, AL
Techtran Industries
Rochester, NY
Telcon Industries
Fort Lauderdale, FL
Tel-Tex Inc
Houston, TX
Termiflex Corp
Nashua, NH
Terminal Data Corp
Rockville, MD
Texas Instruments Digital Systems Group
Houston, TX
Transcom Inc
Sub of HI-G Inc
Windsor Locks, CT
TransNet Corp
Union, NJ
Trendcom/3M
Sunnyvale, CA
U S Instrument Rentals
San Mateo, CA
Wang Laboratories Inc
Lowell, MA

REMOTE LINE PRINTERS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
TELETYPE CORP
Skokie, IL . . . . . ADV PG 129
Acro Corporation
Irvine, CA
Alphamatrix Inc
Feasterville, PA
Anadex Inc
Chatsworth, CA
Anderson Jacobson, Inc
San Jose, CA
Applied Systems Corp
St Claire Shores, MI
AT&T
Morris Plains, NJ
BMS Data Handling Inc
Riverside, CA
Boston Financial & Equity Corp
Boston, MA
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
Cado Systems Corp
Torrance, CA
Cal Datacom
Santa Ana, CA
Centronics Data Computer Corp
Hudson, NH
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
Cognitronics Corp
Stamford, CT
Communications Interface Inc
Minneapolis, MN
Compumart
Cambridge, MA
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Control Data Corp
Minneapolis, MN
Data General Corporation
Westboro, MA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Datapoint Corporation
San Antonio, TX
Data Printer Corp
Malden, MA
Dataproducts Corporation
Woodland Hills, CA
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Dataroyal
Nashua, NH
Decision Data Computer Corp
Horsham, PA
Digital Associates Corp
Stamford, CT
Digital Equipment Corporation
Maynard, MA
Durango Systems Inc
San Jose, CA
Electro Rent
Burbank, CA
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
ECI Div
St Petersburg, FL

Extel Corp.
Northbrook, IL
Florida Data Corp
Melbourne, FL
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
IDE Corp
Cleveland, OH
Illinois Bell Telephone Co.
Chicago, IL
Innovative Electronics Inc
Miami Lakes, FL
Intelligent Systems Corp
Norcross, GA
Interface Mechanisms Inc
Lynnwood, WA
Interface Systems Inc
Ann Arbor, MI
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Local Data
Torrance, CA
Mannesmann Tally
Kent, WA
MDS/Trivex
Costa Mesa, CA
Memorex Corp Communications Group
Cupertino, CA
Mepcom International
Dallas, TX
Mohawk Data Sciences Corp
Parsippany, NJ
MTI Sales Corp
Great Neck, NY
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
NEC Information Systems Inc
Lexington, MA
Okidata Corp
Mt Laurel, NJ
Paradyne Corp
Largo, FL
Plessy Peripheral Systems
Irvine, CA
Printer Systems Corp
Gaithersburg, MD
Printronix Inc
Irvine, CA
Quad Systems Inc
Gaithersburg, MD
Qume Corp
San Jose, CA
Qytel
New York, NY
Rental Electronics Inc
Palo Alto, CA
Selanar Corp
Santa Clara, CA
South Central Bell Telephone Co
Birmingham, AL
Sperry Univac
Blue Bell, PA
Sperry Univac, MCO
Irvine, CA
Teldata Systems Corp
NY, NY
Tele-Data Inc
Miami, FL
Teletype Corp
Skokie, IL
Telex Computer Products Inc
Tulsa, OK
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Texas Instruments Digital Systems Group
Houston, TX
Trans-Lux Corp
Norwalk, CT
TransNet Corp
Union, NJ
Unicom Computer Corporation
Sausalito, CA
Versatec Inc, A Xerox Company
Santa Clara, CA
Wang Laboratories Inc
Lowell, MA

REMOTE JOB ENTRY TERMINALS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
COMPUTER DEVICES INC
Burlington, MA . . . . . ADV PG 128
DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
RACAL-MILGO
Miami, FL . . . . . ADV PG 43

Alphamatrix Inc
Feasterville, PA
Ames Colorfile Corp
Div Ames Safety Envelope Company
Somerville, MA
AM Jacquard Systems
Santa Monica, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Azurdata Inc
Redmond, WA
Beehive International
Salt Lake City, UT
BMS Data Handling Inc
Riverside, CA
Boston Financial & Equity Corp
Boston, MA
The Braegen Corp
Cupertino, CA
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
Cado Systems Corp
Torrance, CA
Cal Datacom
Santa Ana, CA
Centronics Data Computer Corp
Hudson, NH
Chatsworth Data Corp
Chatsworth, CA
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Coastal Data Products
Miami, FL
Codex Corporation
Mansfield, MA
Computer Devices Inc
Burlington, MA
Computer-Link Corp
Burlington, MA
Computer Transceiver Systems Inc
Paramus, NJ
Comtec Information Systems Inc
Cumberland, RI
Comtek Inc
San Antonio, TX
Consolidated Computer International Inc
Phoenix, AZ
Continental Resources Inc
Bedford, MA
Control Concepts
Div of Presearch Inc
Arlington, VA
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Data General Corporation
Westboro, MA
Datapoint Corporation
San Antonio, TX
Dataroyal
Nashua, NH
Data Terminals & Communications
Campbell, CA
Datatrol Inc
Hudson, MA
DDP Systems Inc
NY, NY
Decision Data Computer Corp
Horsham, PA
Delta Data Systems
Trevose, PA
Diablo Systems Inc A Xerox Co
Hayward, CA
Digilog Business Systems Inc
Horsham, PA
Digital Equipment Corporation
Maynard, MA
Durango Systems Inc
San Jose, CA
Envax Corporation
Irving, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Extel Corp.
Northbrook, IL
Findex Inc
Torrance, CA
Four-Phase Systems Inc
Cupertino, CA
Gamma Technology Inc
Palo Alto, CA
General Automation
Anaheim, CA
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Genisco Computers Corporation
Costa Mesa, CA
Harris Corp
Composition Systems Div
Melbourne, FL
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications Industries Inc
Melbourne, FL

Hewlett-Packard Co
Palo Alto, CA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
IESI Inc
Seattle, WA
Interface Technology Inc
St Louis, MO
Interstate Electronics Corp
Anaheim, CA
Local Data
Torrance, CA
Mannesmann Tally
Kent, WA
Mepcom International
Dallas, TX
Microdata Corporation
Irvine, CA
Modems Plus Inc
Decatur, GA
Mohawk Data Sciences Corp
Parsippany, NJ
MTI Sales Corp
Great Neck, NY
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Northern Telecom Inc Electronic Office Systems
Minneapolis, MN
Ontel Corp
Woodbury, NY
Paradyne Corp
Largo, FL
Perkin-Elmer
Oceanport, NJ
Pertec Computer Corp
Los Angeles, CA
Piiceon Inc
Intelligent Systems Div
San Jose, CA
Plessy Peripheral Systems
Irvine, CA
Prime Computer Inc
Natick, MA
Printer Systems Corp
Gaithersburg, MD
Racal-Milgo
Miami, FL
Radian Corp-Unitech Products
Austin, TX
Raytheon Data Systems
Norwood, MA
RCA Service Co
Data Services
Cherry Hill, NJ
Siemens Corp
Iselin, NJ
South Central Bell Telephone Co
Birmingham, AL
Sperry Univac
Blue Bell, PA
Sykes Datatronics
Rochester, NY
Syntest Corporation
Marlboro, MA
Tab Products Co
Palo Alto, CA
Techtran Industries
Rochester, NY
TEC Inc
Tucson, AZ
Telcon Industries
Fort Lauderdale, FL
Tele-Data Inc
Miami, FL
Tel-Tex Inc
Houston, TX
Termiflex Corp
Nashua, NH
Terminal Rentals Inc
Orange, CA
Texas Instruments Digital Systems Group
Houston, TX
Unicom Computer Corporation
Sausalito, CA
U S Instrument Rentals
San Mateo, CA
Wang Laboratories Inc
Lowell, MA
Winterhalter & Associates, Inc
Dexter, MI
Xerox Corp
El Segundo, CA
Xycom Corp
Saline, MI
Zenith Data Systems
Glenview, IL

TELEPRINTERS

DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
Acro Corporation
Irvine, CA
Anderson Jacobson, Inc
San Jose, CA
AT&T
Morris Plains, NJ
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Chess
Denver, CO
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Computer Printers International
Mountain View, CA
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Data General Corporation
Westboro, MA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Dataproducts Corporation
Woodland Hills, CA
Dataproducts of New England
Wallingford, CT
Data Rentals/Sales Inc
Culver City, CA
Datasouth Computer Corp
Charlotte, NC
Data Specialties Inc
Northbrook, IL
Di-An Controls Inc
Boston, MA
Electro Rent
Burbank, CA
Envax Corporation
Irving, TX
E-Systems Inc
ECI Div
St Petersburg, FL
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of the Northwest
Everett, WA
Hawaiian Telephone Co
Honolulu, HI
IBM
Data Processing Div
White Plains, NY
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Information Technology Inc
Needham, MA
Innovative Electronics Inc
Miami Lakes, FL
Interface Systems Inc
Ann Arbor, MI
The David Jamison Carlyle Corp
Los Angeles, CA
Lane Telecommunications
Rolling Hills Estates, CA
Leasametric
Foster City, CA
Memodyne Corp
Needham Heights, MA
Mepcom International
Dallas, TX
Modems Plus Inc
Decatur, GA
Muirhead Inc
Mountainside, NJ
Quint Systems Inc
Northbrook, IL
Qytel
New York, NY
Selecterm Inc
Wakefield, MA
Siemens Corp
Iselin, NJ
Syscom Inc
Sunnyvale, CA
Telex Computer Products Inc
Tulsa, OK
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Texas Instruments Digital Systems Group
Houston, TX
Texprint Inc
Burlington, MA
3M Co
Business Communications Products
St Paul, MN
TransNet Corp
Union, NJ
Trendcom/3M
Sunnyvale, CA
Ultramation
Syracuse, NY
US Robotics Inc
Chicago, IL
The Western Union Telegraph Co
Upper Saddle River, NJ
Xerox Corporation
Stamford, CT

TELEPRINTERS, IMPACT

DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TELETYPE CORP
Skokie, IL . . . . . ADV PG 129
Alanthus Data Communications Corp
Rockville, MD
American Computer Group Inc
Boston, MA
American Terminal Leasing Co
Boston, MA

AM Jacquard Systems
Santa Monica, CA
Anadex Inc
Chatsworth, CA
Anderson Jacobson, Inc
San Jose, CA
Applied Systems Corp
St Claire Shores, MI
AT&T
Morris Plains, NJ
Automated Equipment Inc
Fountain Valley, CA
Boston Financial & Equity Corp
Boston, MA
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Carterfone Communications Corp
Dallas, TX
Centronics Data Computer Corp
Hudson, NH
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinnati Bell
Cincinnati, OH
ComData Corp
Morton Grove, IL
Communications Interface Inc
Minneapolis, MN
Compumart
Cambridge, MA
Computek Inc
Burlington, MA
Computer Datacom Inc
Irvine, CA
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Data General Corporation
Westboro, MA
Dataproducts Corporation
Woodland Hills, CA
Data Rentals/Sales Inc
Culver City, CA
Dataroyal
Nashua, NH
Datasouth Computer Corp
Charlotte, NC
Data Terminals & Communications
Campbell, CA
Decision Data Computer Corp
Horsham, PA
Diablo Systems Inc A Xerox Co
Hayward, CA
Di-An Controls Inc
Boston, MA
Digi-Data Corp
Jessup, MD
Digital Equipment Corporation
Maynard, MA
DMC Systems Inc
Santa Clara, CA
Durango Systems Inc
San Jose, CA
Electro Rent
Burbank, CA
E-Systems Inc
ECI Div
St Petersburg, FL
Extel Corp.
Northbrook, IL
Facit Inc
Greenwich, CT
First Computer Corp
Westmont, IL
Florida Data Corp
Melbourne, FL
General Automation
Anaheim, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Hawaiian Telephone Co
Honolulu, HI
Heath Co
Benton Harbor, MI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Information Technology Inc
Needham, MA
Innovative Electronics Inc
Miami Lakes, FL
Interface Systems Inc
Ann Arbor, MI
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Leasametric
Foster City, CA
Mannesmann Tally
Kent, WA
Mepcom International
Dallas, TX
Modems Plus Inc
Decatur, GA
MPI
Salt Lake City, UT
NCR Comten Inc
St Paul, MN
NEC Information Systems Inc
Lexington, MA
Okidata Corp
Mt Laurel, NJ
Paradyne Corp
Largo, FL
Plessy Peripheral Systems
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Practical Automation Inc
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Prime Computer Inc
Natick, MA
Printer Systems Corp
Gaithersburg, MD
Printer Terminal Communications Corp
Ramona, CA

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Miami, FL
Ramtek Corp
Santa Clara, CA
RCA Service Co
Data Services
Cherry Hill, NJ
Selanar Corp
Santa Clara, CA
Selecterm Inc
Wakefield, MA
Siemens Corp
Iselin, NJ
South Central Bell Telephone Co
Birmingham, AL
Syntest Corporation
Marlboro, MA
Tele-Data Inc
Miami, FL
Teletype Corp
Skokie, IL
Tel-Tex Inc
Houston, TX
Terminal Rentals Inc
Orange, CA
Texas Instruments Digital Systems Group
Houston, TX
Trans-Lux Corp
Norwalk, CT
Trendata/Standard Memories
Santa Ana, CA
United Systems Corp
Dayton, OH
US Robotics Inc
Chicago, IL
Vector Graphic Inc
Westlake Village, CA
The Western Union Telegraph Co
Upper Saddle River, NJ
Westrex OEM Products
West Caldwell, NJ
Xerox Corp
El Segundo, CA
Xerox Corporation
Stamford, CT

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DATA GENERAL CORPORATION
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Moorestown, NJ . . . . . ADV PGS 76-77
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Anderson Jacobson, Inc
San Jose, CA
Boston Financial & Equity Corp
Boston, MA
C & L Terminals Inc
Portland, OR
Carterfone Communications Corp
Dallas, TX
Centronics Data Computer Corp
Hudson, NH
Chess
Denver, CO
ComData Corp
Morton Grove, IL
Compumart
Cambridge, MA

Computer Datacom Inc
Irvine, CA
Computer Devices Inc
Burlington, MA
Computer Printers International
Mountain View, CA
Computer Transceiver Systems Inc
Paramus, NJ
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data General Corporation
Westboro, MA
DatagraphiX Inc
San Diego, CA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Dataproducts Corporation
Woodland Hills, CA
Data Rentals/Sales Inc
Culver City, CA
Digital Equipment Corporation
Maynard, MA
Electro Rent
Burbank, CA
Epson America
Torrance, CA
E-Systems Inc
ECI Div
St Petersburg, FL
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Optronics Corp
South Plainfield, NJ
Hawaiian Telephone Co
Honolulu, HI
Hewlett-Packard Co
Palo Alto, CA
IESI Inc
Seattle, WA
Information Technology Inc
Needham, MA
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Leasametric
Foster City, CA
NCR Corp
Dayton, OH
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Printer Systems Corp
Gaithersburg, MD
Qytel
New York, NY
Selecterm Inc
Wakefield, MA
Siemens Corp
Iselin, NJ
Syscom Inc
Sunnyvale, CA
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
Terminal Rentals Inc
Orange, CA
Texas Instruments Digital Systems Group
Houston, TX
Texprint Inc
Burlington, MA
3M Co
Business Communications Products
St Paul, MN
TransNet Corp
Union, NJ
United Systems Corp
Dayton, OH

TELESCRIBERS

Interstate Electronics Corp
Anaheim, CA
Kurta Corp
Tempe, AZ
Telautograph Corporation
Los Angeles, CA

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INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
TELETYPE CORP
Skokie, IL . . . . . ADV PG 129
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Alanthus Data Communications Corp
Rockville, MD
American Computer Group Inc
Boston, MA
American Terminal Leasing Co
Boston, MA
Anderson Jacobson, Inc
San Jose, CA
Applied Systems Corp
St Claire Shores, MI
AT&T
Morris Plains, NJ
Boston Financial & Equity Corp
Boston, MA
C & L Terminals Inc
Portland, OR
Cal Datacom
Santa Ana, CA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
ComData Corp
Morton Grove, IL
Computer Automation
Naked Mini Div
Irvine, CA
Computer Devices Inc
Burlington, MA
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Rentals/Sales Inc
Culver City, CA
Dataroyal
Nashua, NH
Digital Equipment Corporation
Maynard, MA
Electro Rent
Burbank, CA
Envax Corporation
Irving, TX
E-Systems Inc
ECI Div
St Petersburg, FL
Extel Corp.
Northbrook, IL
General Electric Co
Data Comm Prod Dept
Waynesboro, VA
General Telephone Co of the Northwest
Everett, WA
General Telephone Co of Wisconsin
Sun Prairie, WI
Hawaiian Telephone Co
Honolulu, HI
Hendrix
Manchester, NH
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Innovative Electronics Inc
Miami Lakes, FL
The David Jamison Carlyle Corp
Los Angeles, CA
Leasametric
Foster City, CA
Mannesmann Tally
Kent, WA
Modular Computer Systems
Fort Lauderdale, FL
MTI Sales Corp
Great Neck, NY
NEC Information Systems Inc
Lexington, MA
Nuclear Engineering Services Co
Sunnyvale, CA
Practical Automation Inc
Shelton, CT
Quint Systems Inc
Northbrook, IL
Qytel
New York, NY
RCA Global Communications Inc
New York, NY
RCA Service Co
Data Services
Cherry Hill, NJ
Siemens Corp
Iselin, NJ
South Central Bell Telephone Co
Birmingham, AL
Tele-Data Inc
Miami, FL
Teletype Corp
Skokie, IL
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
Terminal Rentals Inc
Orange, CA
Texas Instruments Digital Systems Group
Houston, TX
Trans-Lux Corp
Norwalk, CT
TransNet Corp
Union, NJ
Ultramation
Syracuse, NY
The Western Union Telegraph Co
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Xerox Corp
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CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
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Westboro, MA . . . . ADV PGS 138-139
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Agile Corp
Sunnyvale, CA
American Microsystems Inc
Santa Clara, CA
Ampex Corp
Memory Products Div
El Segundo, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Systems Corp
St Claire Shores, MI

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Morris Plains, NJ
BMS Data Handling Inc
Riverside, CA
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
Cal Data Lease
Anaheim, CA
Carterfone Communications Corp
Dallas, TX
CHI Corp
Cleveland, OH
Cincinnati Bell
Cincinnati, OH
Codex Corporation
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Commtex Inc
Crofton, MD
Computer Communications Inc
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Comtek Inc
San Antonio, TX
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Bedford, MA
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Westboro, MA
Data Plus Inc
Lorton, VA
DataStream Communications Inc
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Maynard, MA
Emulex Corp
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Envax Corporation
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General Automation
Anaheim, CA
General Instrument Business Systems Div
Hunt Valley, MD
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Everett, WA
Genisco Computers Corporation
Costa Mesa, CA
Goodwood Data Systems
Carleton Pl, ON
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Harris Corp
Composition Systems Div
Melbourne, FL
Hawaiian Telephone Co
Honolulu, HI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
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Honeywell Information Systems
Waltham, MA
Hydril Co
Control Systems Div
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ICOT Corp
Mountain View, CA
Innovative Electronics Inc
Miami Lakes, FL
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
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Leasametric
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MTI Sales Corp
Great Neck, NY
NCR Corp
Dayton, OH
Northern Telecom Inc Electronic Office
Systems
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Nu Data Corp
Little Silver, NJ
Phone 1 Inc
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Miami, FL
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Norwood, MA
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Rochester, NY
Tektronix Inc
Beaverton, OR
Telex Computer Products Inc
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Santa Ana, CA
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Sunnyvale, CA
American Microsystems Inc
Santa Clara, CA
Ampex Corp
Memory Products Div
El Segundo, CA
Amtek Business Machines, Inc
Santa Clara, CA
Bootstrap Ltd
Sandycove, Dublin
Ireland
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
C & L Terminals Inc
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Cablebus Systems Corp
Beaverton, OR
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Anaheim, CA
CHI Corp
Cleveland, OH
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Cincinatti, OH
Communications Interface Inc
Minneapolis, MN
Compumart
Cambridge, MA
Com/Tech Systems
New York, NY
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Data General Corporation
Westboro, MA
Electro Rent
Burbank, CA
Gen/Comp Incorporated
Canton, MA
General Telephone Co of the Northwest
Everett, WA
Genisco Computers Corporation
Costa Mesa, CA
Gould Modicon Div
Andover, MA
Harris Corp
Composition Systems Div
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Palo Alto, CA
Hydril Co
Control Systems Div
Houston, TX
Innovative Electronics Inc
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Ottawa, ON
Canada
Leasametric
Foster City, CA
Maxi-Switch Co
Minneapolis, MN
Mepcom International
Dallas, TX
Modems Plus Inc
Decatur, GA
Nu Data Corp
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Paradyne Corp
Largo, FL
Phone 1 Inc
Loves Park, IL
Sherwood Digital Electronics Corp
Salt Lake City, UT
Sperry Univac, MCO
Irvine, CA
Tel-Tex Inc
Houston, TX
Trendata/Standard Memories
Santa Ana, CA
Triformation Systems Inc
Stuart, FL
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Phoenix, AZ
Versitron Inc
Washington, DC
Zitel Corp
San Jose, CA

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Moorestown, NJ . . . . . ADV PGS 76-77
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
TELETYPE CORP
Skokie, IL . . . . . ADV PG 129

Companies are listed alphabetically with all needed information in the **Vendor Directory, page 301.**

Acro Corporation
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Alanthus Data Communications Corp
Rockville, MD
American Computer Group Inc
Boston, MA
American Terminal Leasing Co
Boston, MA
AM Jacquard Systems
Santa Monica, CA
Amtek Business Machines, Inc
Santa Clara, CA
Anderson Jacobson, Inc
San Jose, CA
Ann Arbor Terminals
Ann Arbor, MI
Applied Digital Data Systems Inc
Hauppauge, NY
Applied Systems Corp
St Claire Shores, MI
Arts Computer Products Inc
Boston, MA
AT&T
Morris Plains, NJ
Automated Equipment Inc
Fountain Valley, CA
Beehive International
Salt Lake City, UT
Boston Financial & Equity Corp
Boston, MA
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Bunker Ramo Corp/Info Sys Div
Trumbull, CT
Burroughs Corp
Detroit, MI
C & L Terminals Inc
Portland, OR
Cado Systems Corp
Torrance, CA
Cal Datacom
Santa Ana, CA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
CHI Corp
Cleveland, OH
Cincinnati Bell
Cincinnati, OH
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Morton Grove, IL
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San Jose, CA
Compumart
Cambridge, MA
Computer Automation
Naked Mini Div
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Computer Datacom Inc
Irvine, CA
Computerized Restaurant Systems, Inc
Anaheim, CA
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Control Concepts
Div of Presearch Inc
Arlington, VA
Control Data Corp
Minneapolis, MN
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Data General Corporation
Westboro, MA
DatagraphiX Inc/Display Dept
San Diego, CA
Datamedia Corp
Pennsauken, NJ
Datapoint Corporation
San Antonio, TX
Data Rentals/Sales Inc
Culver City, CA
Data Science
Redwood City, CA
Data Terminals & Communications
Campbell, CA
Delta Data Systems
Trevose, PA
Digilog Business Systems Inc
Horsham, PA
Digilog Inc
Horsham, PA
Digital Equipment Corporation
Maynard, MA
Direct Inc
Sunnyvale, CA
Electro Rent
Burbank, CA
Emulog Inc
Fremont, CA
Envax Corporation
Irving, TX
Facit Inc
Greenwich, CT
Falco Data Products
Sunnyvale, CA
First Computer Corp
Westmont, IL
Four-Phase Systems Inc
Cupertino, CA
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Lexington, KY
General Telephone Co of the Northwest
Everett, WA
General Telephone Co of Wisconsin
Sun Prairie, WI
General Terminal Corp
Tustin, CA
GTE Telenet Communications Corp
Vienna, VA
Harris Corp
Data Communications Div
Dallas, TX
Hawaiian Telephone Co
Honolulu, HI
Hazeltine Corp
Greenlawn, NY
Heath Co
Benton Harbor, MI
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
Honeywell Information Systems
Waltham, MA
IBM
Data Processing Div
White Plains, NY
ID Systems Corp
Hilliard, OH
Illinois Bell Telephone Co.
Chicago, IL
Indiana Bell Telephone Co.
Indianapolis, IN
Infolink Corp
North Brook, IL
Information Technology Inc
Needham, MA
Intelligent Systems Corp
Norcross, GA
ITT Business Communications Systems
Tempe, AZ
The David Jamison Carlyle Corp
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Micro-Term Inc
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Modems Plus Inc
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MTI Sales Corp
Great Neck, NY
NCR Corp
Dayton, OH
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Novell Data Systems Inc
Orem, UT
Ontel Corp
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Phone 1 Inc
Loves Park, IL
Piiceon Inc
Intelligent Systems Div
San Jose, CA
Plantronics/Santa Cruz
Santa Cruz, CA
Plessy Peripheral Systems
Irvine, CA
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Natick, MA
Prompt Communication Corp
Westlake Village, CA
Qytel
New York, NY
Racal-Milgo
Miami, FL

RCA Global Communications Inc
New York, NY
RCA Service Co
Data Services
Cherry Hill, NJ
Rental Electronics Inc
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Selecterm Inc
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Sidereal Corp
Portland, OR
Siemens Corp
Iselin, NJ
Soroc Technology Inc
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Blue Bell, PA
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TEC Inc
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Tektronix Inc
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Tele-Data Inc
Miami, FL
Teleray Div
Research Inc
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Teletype Corp
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Televideo Systems Inc
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Telex Computer Products Inc
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Tel-Tex Inc
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Terminal Data Corp
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Terminal Rentals Inc
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Texas Instruments Digital Systems Group
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TransNet Corp
Union, NJ
Trendata/Standard Memories
Santa Ana, CA
US Robotics Inc
Chicago, IL
Vector Graphic Inc
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Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
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Xycom Corp
Saline, MI
Zitel Corp
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Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
Cincinnati Bell
Cincinnati, OH
Complete Computer Systems
Horsham, PA
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Computer Systems Consultants
Chelmsford, MA
Comtek Inc
San Antonio, TX
Data Access Systems Inc
Blackwood, NJ
Data General Corporation
Westboro, MA
Datamedia Corp
Pennsauken, NJ
Data Terminals & Communications
Campbell, CA
Digilog Business Systems Inc
Horsham, PA
Digital Equipment Corporation
Maynard, MA
Electro Rent
Burbank, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Electric — Video Display
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General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of Wisconsin
Sun Prairie, WI
General Terminal Corp
Tustin, CA
Harris Corp
Composition Systems Div
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
The David Jamison Carlyle Corp
Los Angeles, CA
CD Johnson/Assoc Ltd
Ottawa, ON
Canada
Lear Siegler Inc/
Data Products Div
Anaheim, CA
Leasametric
Foster City, CA
Lexicon Inc
Waltham, MA
Mannesmann Tally
Kent, WA
MDS/Trivex
Costa Mesa, CA
Memorex Corp Communications Group
Cupertino, CA
Micro-Term Inc
St Louis, MO
MTI Sales Corp
Great Neck, NY
NCR Corp
Dayton, OH
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Ontel Corp
Woodbury, NY
Plessy Peripheral Systems
Irvine, CA
Prime Computer Inc
Natick, MA
Racal-Milgo
Miami, FL
RCA Global Communications Inc
New York, NY
RCA Solid State
Microcomputer Products Div
Lancaster, PA
Rental Electronics Inc
Palo Alto, CA
Siemens Corp
Iselin, NJ
Soroc Technology Inc
Anaheim, CA
South Central Bell Telephone Co
Birmingham, AL
Syscom Inc
Sunnyvale, CA
TEC Inc
Tucson, AZ
Teleray Div
Research Inc
Minneapolis, MN
Terminal Rentals Inc
Orange, CA
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Union, NJ
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Trevose, PA
Dest Corp
San Jose, CA
Lexitron Corp
Thousand Oaks, CA
MFE Corp
Salem, NH
Totec, USA
Northridge, CA
Verbex
Bedford, MA
Wang Laboratories Inc
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Burlington, MA . . . . . ADV PG 128
LANIER BUSINESS PRODUCTS INC
Atlanta, GA . . . . . ADV PGS 126-127
NIXDORF COMPUTER CORP
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AM Jacquard Systems
Santa Monica, CA
Anderson Jacobson, Inc
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Apple Computers
Cupertino, CA
Artelonics Corp, Affiliate of Shell
Canada Ltd
Santa Clara, CA
The Automated Quill
Englewood, CO
BBN Information Mgmt Corp
Cambridge, MA
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
C & L Terminals Inc
Portland, OR
Cado Systems Corp
Torrance, CA
Centronics Data Computer Corp
Hudson, NH
Codex Corporation
Mansfield, MA
Columbia Data Products
Columbia, MD
Compal Inc
Beverly Hills, CA
Compumart
Cambridge, MA
Computer Automation
Commercial Systems Div
Irvine, CA
Computer Devices Inc
Burlington, MA
Computer Systems Consultants
Chelmsford, MA
Comtek Inc
San Antonio, TX
CPT Corp
Eden Prairie, MN
Data Equipment Inc
Sunnyvale, CA
Datapoint Corporation
San Antonio, TX
Dataproducts Corporation
Woodland Hills, CA
Dataroyal
Nashua, NH
Data Terminals & Communications
Campbell, CA
DCD Telecommunications
Mansfield, MA
DDP Systems Inc
NY, NY
Delta Data Systems
Trevose, PA
Digilog Business Systems Inc
Horsham, PA
Digital Equipment Corporation
Maynard, MA
Direct Inc
Sunnyvale, CA
Durango Systems Inc
San Jose, CA
ECS Microsystems
San Jose, CA
Envax Corporation
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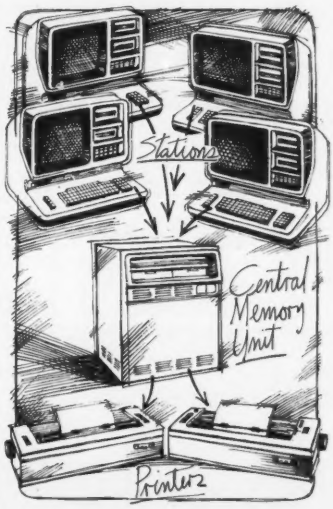

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	$1,929,861	$1,703,506	$1,404,229

to a 132 column statistical tabulation on the same standard narrow 8¾" paper like this:

CONSOLIDATED SUMMARY OF EARNINGS

INCOME:	1978	1977	1976	1975	1974
OPERATING REVENUES	$1,918,988	$1,686,696	$1,383,442	$1,163,204	$1,013,357
OTHER INCOME, NET	10,873	16,810	20,787	13,005	12,956
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Software

The software industry is the most mismanaged industry in the United States. The mismanagement manifests itself in excessive time and cost to develop error-free software that both meets users' present requirements and is amenable to users' changing needs. It is caused by the failure to automate software development and to design software for easy modification; corporate executives' inability to unambiguously specify their requirements; managements' lack of knowledge about software; and the failure of software designers, managers, and corporate executives to apply standard business methods to software ventures.

While it may appear that the software industry is heading for a catastrophe, automation of software development, the reusability of parts of existing programs, and an influx of software-productivity tools will save the day. Furthermore, a better understanding of issues such as specifying software requirements for poorly understood software systems, estimating software-development and -modification costs, and providing better software education for managers more knowledgeable about hardware will substantially improve software productivity in the 1980s.

Many problems now plaguing the software-development industry can be traced to users' poor understanding of what they want their software to do. Software's capabilities for solving increasingly complex problems have grown so rapidly that neither management nor users can entirely comprehend the technology.

Building a software prototype, which is a scaled-down version of the final program, is one way to focus on the functions the user requires. The prototype can be studied by both the user and the designer to see if it meets requirements, needs additional options, and can be modified to meet future business changes. The real software package is modeled on this prototype.

Although the prototypes will cost thousands, users will save hundreds of thousands of dollars, because a large part of maintenance costs, resulting from improperly specified software, will be eliminated. The cost of

changing a software system after building it is up to 25 times the cost of developing it.

There are tools, both available and under development, to help managers specify requirements accurately. Typical of these is TRW's Software Requirements Engineering Methodology (SREM). SREM uses a formal requirements-statement language, such as TRW's Requirement Statement Language (RSL), to describe information systems and embedded systems (such as networks). RSL allows users to specify system properties, events, sources of output and input, system structure, and performance requirements. SREM then uses a computer to analyze and document the specified requirements and generate simulations to validate their correctness and consistency. Requirements-analyzer tools do not design or code programs but help the user to pinpoint the software's intended functions. They are used in defense, business, and distributed processing applications.

Educating management

Software tools can aid managers, but software has become so important and expensive that there is clearly a need for managers who truly understand it. For example, the most knowledgeable managers get the best programmers.

Despite the need for managers and corporate executives who understand software, comparatively few such people exist. At present, company managements know much about hardware but little about software. As a result, management not only has difficulty recognizing talent and good software ideas but does not even understand how much capital investment per person should be made for software. However, software has become such a dominant force in business that a prevailing opinion, spanning computer industry spokesmen to business analysts, is that, in the 1980s, management must either become educated in software or be replaced.

Designing software

Although there are several methodologies for designing software, one cannot learn software design just from studying a particular technique. Experience and intuition are major factors. In addition, constructive, ingenious programming is founded on a good understanding of mathematical methods. There are, however, five steps for generating any program: specifying requirements, prototyping, designing, coding, and testing.

Requirements specification and testing consume the greatest amount of software-development time, and coding the least. Testing is performed during several stages of program development, as well as after program completion. Maintenance or modification of the program frequently affects the original requirements specifications. If this happens, the program-generation process begins again.

Program documentation, which begins during requirements specification, should include maintaining a data dictionary containing definitions and descriptions of terms, reasons for design decisions, and design trade-off information. Most programmers do not adequately document their programs. This results in the bulk of maintenance time being spent understanding what a program does and how it works and why, instead of making changes. In addition, charts, graphics, and color pictures should be used to enhance communications between users and designers.

Automating software

Even if these procedures are followed and specific design methodologies are followed, most software designers and managers agree that building software still takes too long and costs too much. More innovation is necessary to increase software productivity.

A major breakthrough that will make a 100 percent improvement is needed. This will come about through automating software development and learning how to reuse parts of existing software for new programs.

Although, until now, the software industry has managed to automate almost every industry but its own, a variety of computer-aided design tools for developing software are now available. These software tools are actually programs that prompt the user to specify his requirements in English and describe the system he wishes to design. They then generate program code in languages such as Fortran, Cobol, PL/1, or a proprietary language. These tools are used to structure databases and to create data processing, scientific, and systems software.

These computer-aided software-design tools automatically generate documentation as they write the program code, and they allow the user to specify the output format. Tutorial information for the user is also provided, usually through a single command, HELP. There are also tools to help users specify requirements, verify programs, estimate software costs, modify software, and optimize program behavior.

One disadvantage of automated programming is that automated software may turn out to be almost, but not quite, what a user wants. Users must look at the economics involved in automation as a software-productivity solution. If a user can buy a payroll program that is almost what he needs for $10,000 or one that exactly fits his needs for $1 million, he must look at the trade-offs and reduce his expectations.

Designing for change

The most well-thought-out software does not run forever; sooner or later it must be replaced. Even when a piece of software meets a user's original requirements, as he becomes acquainted with the software system, he perceives new ways it can be used. As a result, his business horizons expand, and his requirements specifications change. Because users' needs can be expected to change, software must be designed to be easily alterable.

One method of designing for change is to break a program into smaller modules, which are loosely interfaced, to create one large program. However, programs made of loosely coupled modules are not the most efficient programs. Such programs use more memory and execute more slowly than strongly coupled ones. But, since the best design for ease of

change is not the best design for program-execution efficiency, the trade-offs need to be evaluated and a compromise made.

Estimating software costs

To realistically estimate software-development costs, collect as much data as possible about costs of previous software projects. Estimate how much experience you have in projects similar to your current software project and how competent the people are that will work on it. Decide how many software-productivity tools and how much hardware you have or will need to purchase for this project. All this data must be integrated to develop a cost model.

Buying extra hardware may lower software costs, but it increases hardware costs. Software-productivity tools also lower software costs, but the cost of these tools may be traded off against the costs of developing the software conventionally. ■

For more on software, see "Some answers to the software problems of the 1980s," Wendy Rauch-Hindin, DATA COMMUNICATIONS, May 1981. The author discusses educating management about software and handling software personnel, automating software design, and trends in the software industry.

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GTE Telenet Communications Corp
Vienna, VA
Harbor Electronics
Ridgefield, CT
Heath Co
Benton Harbor, MI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Hewlett-Packard
Desktop Computer Div.
Ft. Collins, CO
Hydril Co
Control Systems Div
Houston, TX
IBM
Data Processing Div
White Plains, NY
IDE Corp
Cleveland, OH
Industrial Computer Controls Inc
Cambridge, MA
Inmac
Santa Clara, CA
Innovative Electronics Inc
Miami Lakes, FL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Kurta Corp
Tempe, AZ
Leading Edge Inc.
Canton, MA
Lemcom Systems Inc
Phoenix, AZ
Macrolink
Anaheim, CA
Memorex Corp Communications Group
Cupertino, CA
Mepcom International
Dallas, TX
Modems Plus Inc
Decatur, GA
Modular Computer Systems
Fort Lauderdale, FL
Monolithic Systems Corp
Englewood, CO
MSI Data Corp
Costa Mesa, CA
Muirhead Inc
Mountainside, NJ
National Electric Cable
Elk Grove Village, IL
NEC Information Systems Inc
Lexington, MA
Network Systems Corp
Brooklyn Pk, MN
Nolton Communications
Cheshunt, Herts
England
Northern Telecom Inc Business
Communications Systems
Richardson, TX
Nu Data Corp
Little Silver, NJ
Ontel Corp
Woodbury, NY
Pacific Cyber/Metrix Inc
Dublin, CA
Page Communications Engineers Inc
Vienna, VA
Periphonics Corp
Bohemia, NY
Phone 1 Inc
Loves Park, IL

Plessy Peripheral Systems
Irvine, CA
Point-4 Data Corp
Irvine, CA
Prime Computer Inc
Natick, MA
Printer Terminal Communications Corp
Ramona, CA
Quad Systems Inc
Gaithersburg, MD
Racal-Telesystems Inc
Chicago, IL
Radian Corp-Unitech Products
Austin, TX
RCA Global Communications Inc
New York, NY
Sherwood Digital Electronics Corp
Salt Lake City, UT
Sidereal Corp
Portland, OR
Software Results Corp
Columbus, OH
Sperry Univac, MCO
Irvine, CA
Standard Engineering
Fremont, CA
Standard Microsystems
Hauppauge, NY
Support Systems International
Richmond, CA
Syscom Inc
Sunnyvale, CA
Sytek Inc
Sunnyvale, CA
Technical Analysis Corp
Atlanta, GA
Tek-Com
San Jose, CA
Tekelec Inc
Santa Monica, CA
Telecommunications Techniques Corp
Gaithersburg, MD
Telex Marketing Company Div of North
American Telecommunications Corp
Culver City, CA
Terminal Data Corp
Rockville, MD
TMI Systems Corporation
Lexington, MA
Triformation Systems Inc
Stuart, FL
Triton Engineering Inc
Gaithersburg, MD
The TRW-Fujitsu Co
Los Angeles, CA
Ultramation
Syracuse, NY
Ungermann-Bass Inc
Santa Clara, CA
United Data Services Co Inc
Phoenix, AZ
Versitron Inc
Washington, DC
Vertex Electronics Inc
Farmingdale, NY
Via West Inc
Rio Rico, AZ
Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
Upper Saddle River, NJ
Xycom Corp
Saline, MI
Zitel Corp
San Jose, CA

DATA ACCESS ARRANGEMENT DEVICES

ASTROCOM CORP
St Paul, MN . . . . . ADV PG 5
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
INTERTEL INC
Andover, MA . . . . . ADV PG 80
RACAL-VADIC INC
Sunnyvale, CA . . . . . ADV PG 63
UNIVERSAL DATA SYSTEMS INC
Huntsville, AL . . . . . ADV PG Cover 4

To find local sales offices of companies, turn to **Vendor Directory, page 301.**

Astrocom Corp
St Paul, MN
Bizcomp Corporation
Menlo Park, CA
Boston Financial & Equity Corp
Boston, MA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Computer Transceiver Systems Inc
Paramus, NJ
Comtec Information Systems Inc
Cumberland, RI
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Dimensions Inc
Norwalk, CT
Data Rentals/Sales Inc
Culver City, CA
Data Switch Corporation
Norwalk, CT
Digilog Inc
Horsham, PA
Envax Corporation
Irving, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
General DataComm Ind Inc
Danbury, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of Wisconsin
Sun Prairie, WI
Glasgal Communications Services Inc
Harrington Park, NJ
Gordos International Corp
Bloomfield, NJ
Hawaiian Telephone Co
Honolulu, HI
Infolink Corp
North Brook, IL
Intertel Inc
Andover, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Modtech Inc
Livermore, CA
Multi-Tech Systems Inc
New Brighton, MN
NCR Corp
Dayton, OH
Omnitec Data
Phoenix, AZ
Panafax Corp
Woodbury, NY
Paradyne Corp
Largo, FL
Precision Communications Services Inc
Tampa, FL
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Racal-Vadic Inc
Sunnyvale, CA
RCA Service Co
Data Services
Cherry Hill, NJ
Scope Electronics Inc
Reston, VA
Support Systems International
Richmond, CA
Tek-Com
San Jose, CA
Universal Data Systems Inc
Huntsville, AL
The Western Union Telegraph Co
Upper Saddle River, NJ

DATA COMPRESSION DEVICES

INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
Applied Systems Corp
St Claire Shores, MI
Centigram Corp
Sunnyvale, CA
Colorado Video Inc
Boulder, CO
Compression Labs Inc
San Jose, CA
Comtek Inc
San Antonio, TX
General Telephone Co of the Northwest
Everett, WA
Innovative Electronics Inc
Miami Lakes, FL
Lemcom Systems Inc
Phoenix, AZ
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Mepcom International
Dallas, TX
Quad Systems Inc
Gaithersburg, MD

DATA JACKS AND PLUGS

ADC DATA COMMUNICATIONS
Minneapolis, MN . . . . . ADV PG 157
ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
T-BAR INC
Wilton, CT . . . . . ADV PG 159
ADC Data Communications
Minneapolis, MN
AT&T
Morris Plains, NJ
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Cincinnati Bell
Cincinnati, OH
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Continental Resources Inc
Bedford, MA
Data Set Cable Co Inc
Ridgefield, CT

Dynatech Data Systems
Springfield, VA
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
General Telephone Co of Kentucky
Lexington, KY
General Telephone Co of the Northwest
Everett, WA
Hawaiian Telephone Co
Honolulu, HI
Inmac
Santa Clara, CA
International Data Sciences Inc
Lincoln, RI
Lynn Electronics Corp
Feasterville, PA
Modtech Inc
Livermore, CA
National Electric Cable
Elk Grove Village, IL
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Precision Communications Services Inc
Tampa, FL
Support Systems International
Richmond, CA
T-bar Inc
Wilton, CT
Telecommunications Techniques Corp
Gaithersburg, MD
Termiflex Corp
Nashua, NH
Trompeter Electronics Inc
Chatsworth, CA
Vertex Electronics Inc
Farmingdale, NY

DATA SECURITY DEVICES: ENCODER/DECODERS

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
MOTOROLA GOV'T ELECTRONICS DIV
Scottsdale, AZ . . . . . ADV PG 67
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Advanced Micro Devices
Sunnyvale, CA
American Microsystems Inc
Santa Clara, CA
American Satellite Company
Rockville, MD
Applied Systems Corp
St Claire Shores, MI
W A Brown Instruments
Orlando, FL
Cincinatti Electronics Corp
Cincinatti, OH
Codex Corporation
Mansfield, MA
Computer Transceiver Systems Inc
Paramus, NJ
Com/Tech Systems
New York, NY
Dataprobe Inc
Palisades Park, NJ
Dataproducts of New England
Wallingford, CT
Datotek Inc
Dallas, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Fairchild Space & Electronics Company
Germantown, MD
Glasgal Communications Services Inc
Harrington Park, NJ
Hellman Associates
Palo Alto, CA
HLB Security Electronics Ltd
NY, NY
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Mepcom International
Dallas, TX
Motorola Gov't Electronics Div
Scottsdale, AZ
Paradyne Corp
Largo, FL
Pyrotronics
Cedar Knolls, NJ
Racal-Milgo
Miami, FL
Saber Laboratories Inc
San Francisco, CA
Sangamo Weston, Inc, Data Systems Division
Sarasota, FL
Siemens Corp
Iselin, NJ
SPI Data
Mt View, CA
Sytek Inc
Sunnyvale, CA
Tele-Signal Corp
Hauppauge, NY
Triton Engineering Inc
Gaithersburg, MD

DATA SECURITY DEVICES: PERSONAL IDENTIFICATION SYSTEMS

MOTOROLA GOV'T ELECTRONICS DIV
Scottsdale, AZ . . . . . ADV PG 67
Cardkey Systems
Chatsworth, CA
Control Laser Corp
Orlando, FL
DP Communications
NY, NY
General Automation
Anaheim, CA
GTE Telenet Communications Corp
Vienna, VA
HLB Security Electronics Ltd
NY, NY
Identification Systems Inc
Acton, MA
Master Specialties Co
Costa Mesa, CA
Mepcom International
Dallas, TX
Motorola Gov't Electronics Div
Scottsdale, AZ
Panafax Corp
Woodbury, NY
Pyrotronics
Cedar Knolls, NJ
Rusco Electronic Systems
Glendale, CA
Schlage Electronics
Santa Clara, CA

DATA SECURITY DEVICES: SOFTWARE SECURITY MODULES

MOTOROLA GOV'T ELECTRONICS DIV
Scottsdale, AZ . . . . . ADV PG 67
American Multiplex Systems
Fullerton, CA
American Satellite Company
Rockville, MD
Boole & Babbage Inc
Sunnyvale, CA
Cincinatti Electronics Corp
Cincinatti, OH
Computrol Corp
Ridgefield, CT
Digital Equipment Corporation
Maynard, MA
Exact Systems and Programming Corp
Thornwood, NY
Gamma Technology Inc
Palo Alto, CA
HLB Security Electronics Ltd
NY, NY
IBM
Data Processing Div
White Plains, NY
Inmac
Santa Clara, CA
Int'l Management Services Inc
Framingham, MA
Linkabit Corporation
a Ma/Com Company
San Diego, CA
Motorola Gov't Electronics Div
Scottsdale, AZ
MSP Inc
Lexington, MA
On-Line Software Int'l
River Edge, NJ
SPI Data
Mt View, CA
Wang Laboratories Inc
Lowell, MA

FIRE DETECTION/PROTECTION EQUIPMENT

American Multiplex Systems
Fullerton, CA
Autocall Div/
Federal Signal Corp
Shelby, OH
Cablebus Systems Corp
Beaverton, OR
Computrol Corp
Ridgefield, CT
S H Couch Co
Tecumseh, MI
Faraday Inc
Tecumseh, MI
Fenwal Inc
Ashland, MA
Fi Quench Fire Systems of Fike Metal Products
Blue Springs, MO
Fire-Lite Alarms Inc
New Haven, CT
Grinnell Fire Protection Systems Co
Providence, RI
Inmac
Santa Clara, CA
Walter Kidde/Div of Kidde Inc
Belleville, NJ
Mepcom International
Dallas, TX
Notifier Co
Lincoln, NE
Page Communications Engineers Inc
Vienna, VA
Pyrotronics
Cedar Knolls, NJ
Standard Electric Time Corp
Tecumseh, MI
Wright Line Inc
Worcester, MA

ERROR CONTROLLERS

DIGITAL COMMUNICATIONS CORP A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
TIMEPLEX INC
Rochelle Park, NJ . . . . . ADV PG 45
Advanced Micro Devices
Sunnyvale, CA
Continental Resources Inc
Bedford, MA

Digital Communications Corp
A M/A-COM Co
Germantown, MD
Frederick Electronics Corp
Frederick, MD
Glasgal Communications Services Inc
Harrington Park, NJ
Hewlett-Packard Co
Palo Alto, CA
Innovative Electronics Inc
Miami Lakes, FL
International Data Sciences Inc
Lincoln, RI
Micom Systems Inc
Chatsworth, CA
Modems Plus Inc
Decatur, GA
Robins Industries Corp
Commack, NY
Timeplex Inc
Rochelle Park, NJ

FURNITURE, CABINETS, TERMINAL ENCLOSURES

NORTHERN TELECOM INC SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
AMCO Engineering Co
Schiller Pk, IL
American National Supply
Gardena, CA
AM Jacquard Systems
Santa Monica, CA
Ardent Computer Products
Dobbs Ferry, NY
W A Brown Instruments
Orlando, FL
Chess
Denver, CO
Comark Corp
Waltham, MA
Compal Inc
Beverly Hills, CA
Computer Automation
Naked Mini Div
Irvine, CA
Computer Datacom Inc
Irvine, CA
Computer Extension Systems Inc
Houston, TX
Computer Roomers Inc
Dallas, TX
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Equipment Inc
Sunnyvale, CA
Data Mate/The Maine Mfg Co
Nashua, NH
DCD Telecommunications
Mansfield, MA
DEI-Teleproducts
Escondido, CA
Denison Kybe Corp
Waltham, MA
Engineered Data Products
Denver, CO
Facit Inc
Greenwich, CT
Gates Acoustinet Inc
Santa Rosa, CA
General Telephone Co of Kentucky
Lexington, KY
Hamilton Sorter Company Inc
Fairfield, OH
Hawaiian Telephone Co
Honolulu, HI
Heath Co
Benton Harbor, MI
IDE Corp
Cleveland, OH
Inmac
Santa Clara, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Modular Furniture Concepts Inc
Torrance, CA
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Optima Div/Scientific-Atlanta
Tucker, GA
Plessy Peripheral Systems
Irvine, CA
PolyMorphic Systems
Santa Barbara, CA
Pro-Log Corporation
Monterrey, CA
Rixon Inc
Silver Spring, MD
Samsonite Contract Furniture
Denver, CO
Singer Co
Librascope Div
Glendale, CA
Stantron Div
Wyco Metal Prod
N Hollywood, CA
Structural Concepts Corp
Spring Lake, MI
Systems Furniture Co
Torrance, CA
Tab Products Co
Palo Alto, CA
Telex Marketing Company Div of North
American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
Terminal Data Corp
Rockville, MD
Tiffany Stand and Furniture Co
St Louis, MO
TransNet Corp
Union, NJ
Van San Corp
City of Industry, CA
Vector Graphic Inc
Westlake Village, CA
Virco Mfg Corp
Los Angeles, CA
Western Peripherals Inc
Tustin, CA
The Western Union Telegraph Co
Upper Saddle River, NJ
The Widget Works
St Augustine, FL
Wright Line Inc
Worcester, MA

Stay up-to-date with new catalog information and new product announcements.
Turn to **UpDate Service Card, page 201.**

MICROFILM EQUIPMENT, SYSTEMS AND SERVICES

AM Micrographics
Tustin, CA
Complete Computer Systems
Horsham, PA
Cubic Corp
San Diego, CA
DatagraphiX Inc
San Diego, CA
Grumman Data Systems Corp
Woodbury, NY
Image Systems Inc
Culver City, CA
Information Technology Inc
Needham, MA
Inmac
Santa Clara, CA
Northwest Microfilm Inc
Minneapolis, MN
Xerox Corporation
Stamford, CT

PAPER FOR TERMINALS

GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
American National Supply
Gardena, CA
Anderson Jacobson, Inc
San Jose, CA
Automation Papers Co Inc
Fairfield, NJ
C & L Terminals Inc
Portland, OR
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Computer Transceiver Systems Inc
Paramus, NJ
Continental Resources Inc
Bedford, MA
Data Access Systems Inc
Blackwood, NJ
Data Equipment Inc
Sunnyvale, CA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Eastern Specialties Co
Northfield, IL
Exxon Office Systems Co
Stamford, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
Graphic Controls
Coated Prod Div
Buffalo, NY
Heath Co
Benton Harbor, MI
Hewlett-Packard Co
Palo Alto, CA
Inmac
Santa Clara, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Lawrence Packaging Supply Corp
Newark, NJ
Panafax Corp
Woodbury, NY
RCA Service Co
Data Services
Cherry Hill, NJ
Selecterm Inc
Wakefield, MA
Support Systems International
Richmond, CA
Telautograph Corporation
Los Angeles, CA
Telex Marketing Company Div of North
American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
Terminal Rentals Inc
Orange, CA
Trans-Lux Corp
Norwalk, CT
TransNet Corp
Union, NJ
Triformation Systems Inc
Stuart, FL
The TRW-Fujitsu Co
Los Angeles, CA
The Western Union Telegraph Co
Upper Saddle River, NJ

POWER DISTRIBUTION-REGULATION

Burroughs Corp
Detroit, MI
California Instruments
Div of Norlin Industries
San Diego, CA
Chess
Denver, CO
Compumart
Cambridge, MA
Computer Power Systems Corp
Carson, CA
Emergency Power Engineering Inc.
Costa Mesa, CA
Inmac
Santa Clara, CA
Shape Magnetronics Inc
Lombard, IL
Sola, A unit of General Signal
Elk Grove Vill, IL
Stromberg-Carlson Corp
Sanford, FL
Technipower
A Penril Co, Variac
Danbury, CT
Technipower
A Penril Co, Power Supplies
Danbury, CT
Teledyne Inet
Torrance, CA
Topaz DPP Div
San Diego, CA
Transtector Systems
Post Falls, ID

POWER SUPPLIES

DATA GENERAL CORPORATION
Westboro, MA . . . . ADV PGS 138-139
ELGAR CORP
San Diego, CA . . . . . ADV PG 161
Analog Devices
Norwood, MA
Atlas Energy Systems
South El Monte, CA
Boschert Inc
Sunnyvale, CA
California Instruments
Div of Norlin Industries
San Diego, CA
Clary Corp
San Gabriel, CA
Computer Automation
Naked Mini Div
Irvine, CA
Continental Power Systems Inc
Stamford, CT
Data General Corporation
Westboro, MA
Datametrics Corp—Defense Products Div
Van Nuys, CA
Dranetz Engineering Labs Inc
Edison, NJ
Electro Rent
Burbank, CA
Elgar Corp
San Diego, CA
Emergency Power Engineering Inc.
Costa Mesa, CA
Esterline Angus Instrument Corp
Indianapolis, IN
Gates Energy Products Inc
Denver, CO
Glenayre Electronics Inc
Blaine, WA
Hewlett-Packard Co
Palo Alto, CA
Kapusi Laboratories
San Mateo, CA
Lorain Products Coproration
Lorain, OH
Midland-Ross
Midtex Div Midcom Unit
North Mankato, MN
Nova Electric Mfg Co
Nutley, NJ
Pertec Computer Corp
Peripherals Div
Chatsworth, CA
Powertec Inc
Chatsworth, CA
Rental Electronics Inc
Palo Alto, CA
Singer Co
Librascope Div
Glendale, CA
Sola, A unit of General Signal
Elk Grove Vill, IL
Technipower
A Penril Co, Variac
Danbury, CT
Technipower
A Penril Co, Power Supplies
Danbury, CT
Teledyne Inet
Torrance, CA
Termiflex Corp
Nashua, NH
Topaz, Inc/Powermark Div
San Diego, CA
Vertex Electronics Inc
Farmingdale, NY
Zi-Tech Div/Aikenwood Corp
Palo Alto, CA

PROTOCOL CONVERTERS

ARK ELECTRONIC PRODUCTS
Melbourne, FL . . . . . ADV PG 60
ASSOCIATED COMPUTER CONSULTANTS
Santa Barbara, CA . . . . . ADV PG 97
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GENERAL DATACOMM IND INC
Danbury, CT . . . . . ADV PGS 39,41
INNOVATIVE ELECTRONICS INC
Miami Lakes, FL . . . . . ADV PG 158
LOCAL DATA
Torrance, CA . . . . . ADV PG 156
MODEMS PLUS INC
Decatur, GA . . . . . ADV PG 36
RACAL-TELESYSTEMS INC
Chicago, IL . . . . . ADV PG 152
Air Land Systems Corp
Fairfax, VA
Alphamatrix Inc
Feasterville, PA
Applied Systems Corp
St Claire Shores, MI
ARK Electronic Products
Melbourne, FL
Associated Computer Consultants
Santa Barbara, CA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
BMS Data Handling Inc
Riverside, CA
Cado Systems Corp
Torrance, CA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Commtex Inc
Crofton, MD
Communications Interface Inc
Minneapolis, MN
Computer Communications Inc
Torrance, CA
Comtek Inc
San Antonio, TX
Continental Resources Inc
Bedford, MA
CSS Telecommunications
Mountain View, CA
Data Plus Inc
Lorton, VA
Datapoint Corporation
San Antonio, TX
DataStream Communications Inc
Santa Clara, CA
DCD Telecommunications
Mansfield, MA
DP Communications
NY, NY
Dynatech Packet Technology
Springfield, VA
Edge Technology
Portland, OR
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Gamma Technology Inc
Palo Alto, CA
Gen/Comp Incorporated
Canton, MA
General DataComm Ind Inc
Danbury, CT
Glasgal Communications Services Inc
Harrington Park, NJ
GTE Telenet Communications Corp
Vienna, VA
Industrial Computer Controls Inc
Cambridge, MA
Innovative Electronics Inc
Miami Lakes, FL
InteCom Inc
Dallas, TX
Interface Systems Inc
Ann Arbor, MI
The David Jamison Carlyle Corp
Los Angeles, CA
Kaufman Research Mfg Inc
Mountain View, CA
KMW Systems Inc
Austin, TX
Lemcom Systems Inc
Phoenix, AZ
Local Data
Torrance, CA
Modems Plus Inc
Decatur, GA
Nu Data Corp
Little Silver, NJ
Perle Systems Ltd
Scarborough, ON
Canada
Protocol Computers Inc
Woodland Hills, CA
Pulsecom Div/Harvey Hubbell
Falls Church, VA
Quad Systems Inc
Gaithersburg, MD
Qytel
New York, NY
Racal-Telesystems Inc
Chicago, IL
Racon Inc
Seattle, WA
Sherwood Digital Electronics Corp
Salt Lake City, UT
Signetics Corporation
Sunnyvale, CA
Standard Engineering
Fremont, CA
Syscom Inc
Sunnyvale, CA
Systar Corporation
San Jose, CA
Sytek Inc
Sunnyvale, CA
TeleProcessing Products Inc
Simi Valley, CA

Terminal Data Corp
Rockville, MD
Trendata/Standard Memories
Santa Ana, CA
Tri Data
Mountain View, CA
Ungermann-Bass Inc
Santa Clara, CA
Via West Inc
Rio Rico, AZ
The Widget Works
St Augustine, FL
Winterhalter & Associates, Inc
Dexter, MI

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

PULSE AND SIGNAL REGENERATORS

Cincinnati Bell
Cincinnati, OH
Interstate Electronics Corp
Anaheim, CA
Precision Monolithics Inc
Santa Clara, CA
Telecommunications Techniques Corp
Gaithersburg, MD
Tele-Signal Corp
Hauppauge, NY
United Data Services Co Inc
Phoenix, AZ

RIBBONS AND SUPPLIES FOR TERMINALS AND PRINTERS

GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
American National Supply
Gardena, CA
Analytical Chem Labs
Elk Grove Village, IL
Anderson Jacobson, Inc
San Jose, CA
Aspen Ribbons Inc
Boulder, CO
Automation Papers Co Inc
Fairfield, NJ
W A Brown Instruments
Orlando, FL
C & L Terminals Inc
Portland, OR
Centronics Data Computer Corp
Hudson, NH
Compal Inc
Beverly Hills, CA
Compumart
Cambridge, MA
Computer Datacom Inc
Irvine, CA
Control Data Corp
Minneapolis, MN
Data Access Systems Inc
Blackwood, NJ
Data Equipment Inc
Sunnyvale, CA
Dataproducts Corporation
Woodland Hills, CA
Dayco Corp
Dayton, OH
Diablo Systems Inc A Xerox Co
Hayward, CA
Digital Associates Corp
Stamford, CT
DSG Inc
Philadelphia, PA
Eastern Specialties Co
Northfield, IL
Exxon Office Systems Co
Stamford, CT
Facit Inc
Greenwich, CT
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
Heath Co
Benton Harbor, MI
Hewlett-Packard Co
Palo Alto, CA
HMW Enterprises Inc
Etters, PA
Inmac
Santa Clara, CA
The David Jamison Carlyle Corp
Los Angeles, CA
Lawrence Packaging Supply Corp
Newark, NJ
Leading Edge Inc.
Canton, MA
Mohawk Data Sciences Corp
Parsippany, NJ
NEC Information Systems Inc
Lexington, MA
Qytel
New York, NY
RCA Service Co
Data Services
Cherry Hill, NJ
Roytype
West Hartford, CT
Selecterm Inc
Wakefield, MA
Siemens Corp
Iselin, NJ
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
TransNet Corp
Union, NJ
Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
Upper Saddle River, NJ
Xerox Corporation
Stamford, CT

SATELLITE DELAY COMPENSATION UNITS

American Satellite Company
Rockville, MD
California Microwave Inc
Sunnyvale, CA
Fairchild Space & Electronics Company
Germantown, MD
Industrial Computer Controls Inc
Cambridge, MA
Lemcom Systems Inc
Phoenix, AZ
Qytel
New York, NY
Systar Corporation
San Jose, CA
Telecommunications Techniques Corp
Gaithersburg, MD

SELECTION & TRANSFER EQUIPMENT: MONITOR & TEST SWITCHING EQUIPMENT

ADC DATA COMMUNICATIONS
Minneapolis, MN . . . . . ADV PG 157
ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
NORTHERN TELECOM INC SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
T-BAR INC
Wilton, CT . . . . . ADV PG 159
ADC Data Communications
Minneapolis, MN
Applied Delta Systems Inc
Bellmawr, NJ
Atlantic Research Corp
Alexandria, VA
Bradley Telcom Corp
Leonia, NJ
Bytex Corp
Newton, MA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Data Control Systems
Div of General Indicator Corp
Danbury, CT
Dataprobe Inc
Palisades Park, NJ
Dataproducts of New England
Wallingford, CT
Data Set Cable Co Inc
Ridgefield, CT
Data Switch Corporation
Norwalk, CT
Digilog Inc
Horsham, PA
Dranetz Engineering Labs Inc
Edison, NJ
Dynatech Data Systems
Springfield, VA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Hekimian Labs Inc
Gaithersburg, MD
Inmac
Santa Clara, CA
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Paradyne Corp
Largo, FL
Scientific-Atlanta Inc
Satcom Division
Atlanta, GA
Syscom Inc
Sunnyvale, CA
T-bar Inc
Wilton, CT
Telecommunications Techniques Corp
Gaithersburg, MD
Telecommunications Technology, Inc
a Unit of General Signal Corp
Sunnyvale, CA
Tele-Signal Corp
Hauppauge, NY
Triton Engineering Inc
Gaithersburg, MD

SELECTION & TRANSFER EQUIPMENT: PATCHING EQUIPMENT

ADC DATA COMMUNICATIONS
Minneapolis, MN . . . . . ADV PG 157
ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
DYNATECH DATA SYSTEMS
Springfield, VA . . . . . ADV PG 78
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
T-BAR INC
Wilton, CT . . . . . ADV PG 159
ADC Data Communications
Minneapolis, MN
Applied Delta Systems Inc
Bellmawr, NJ
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Bytex Corp
Newton, MA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Dataprobe Inc
Palisades Park, NJ
Data Set Cable Co Inc
Ridgefield, CT
Digilog Inc
Horsham, PA
Dynatech Data Systems
Springfield, VA
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Nuclear Engineering Services Co
Sunnyvale, CA
Paradyne Corp
Largo, FL
T-bar Inc
Wilton, CT
Telecommunications Techniques Corp
Gaithersburg, MD
Tele-Signal Corp
Hauppauge, NY
Triton Engineering Inc
Gaithersburg, MD
Trompeter Electronics Inc
Chatsworth, CA

For further catalog information, turn to **UpDate Service Card, page 201.**

SELECTION & TRANSFER EQUIPMENT: RECONFIGURATION EQUIPMENT

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Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
T-BAR INC
Wilton, CT . . . . . ADV PG 159
ADC Data Communications
Minneapolis, MN
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Bytex Corp
Newton, MA
Codex Corporation
Mansfield, MA
Data Switch Corporation
Norwalk, CT
DCD Telecommunications
Mansfield, MA
Electrodata Inc
Bedford Heights, OH
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Hawaiian Telephone Co
Honolulu, HI
Intertel Inc
Andover, MA
Kapusi Laboratories
San Mateo, CA
NCR Comten Inc
St Paul, MN
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Paradyne Corp
Largo, FL
Remark International
Woodbury, NY
T-bar Inc
Wilton, CT
TeleProcessing Products Inc
Simi Valley, CA

SWITCHES, DATA COMMUNICATIONS: AUTOMATIC

ADC DATA COMMUNICATIONS
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ATLANTIC RESEARCH CORP
Alexandria, VA . . . . . ADV PG 79
CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
DIGITAL COMMUNICATIONS ASSOC INC
Norcross, GA . . . . . ADV PG 34
DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
Germantown, MD . . . . . ADV PG 42
GANDALF DATA INC
Wheeling, IL . . . . . ADV PG 6
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
INTERTEL INC
Andover, MA . . . . . ADV PG 80
MICOM SYSTEMS INC
Chatsworth, CA . . . . . ADV PGS Cover 3,37,59
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
T-BAR INC
Wilton, CT . . . . . ADV PG 159

ADC Data Communications
Minneapolis, MN
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Boston Financial & Equity Corp
Boston, MA
Bytex Corp
Newton, MA
Canadian Marconi
Montreal, Quebec,
Canada
Chess
Denver, CO
Codex Corporation
Mansfield, MA
Computer Sciences Corp
El Segundo, CA
Connectair Co
Auburn, WA
Datacomm Management Sciences Inc
East Norwalk, CT
Data Plus Inc
Lorton, VA
Datapoint Corporation
San Antonio, TX
Data Switch Corporation
Norwalk, CT
DCD Telecommunications
Mansfield, MA
Develcon Electronics Inc
Doylestown, PA
Digilog Inc
Horsham, PA
Digital Associates Corp
Stamford, CT
Digital Communications Assoc Inc
Norcross, GA
Digital Communications Corp
A M/A-COM Co
Germantown, MD
Dynatech Packet Technology
Springfield, VA
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Frederick Electronics Corp
Frederick, MD
Gandalf Data Inc
Wheeling, IL
General Telephone Co of the Northwest
Everett, WA
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Gould Modicon Div
Andover, MA
GTE Telenet Communications Corp
Vienna, VA
InteCom Inc
Dallas, TX
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
Kapusi Laboratories
San Mateo, CA
Lemcom Systems Inc
Phoenix, AZ
Linkabit Corporation
a Ma/Com Company
San Diego, CA

Micom Systems Inc
Chatsworth, CA
Micro Switch Div
Honeywell Inc
Freeport, IL
Muirhead Inc
Mountainside, NJ
Northern Telecom Inc
Nashville, TN
Northern Telecom Inc Business
Communications Systems
Richardson, TX
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Omnitec Data
Phoenix, AZ
Paradyne Corp
Largo, FL
Periphonics Corp
Bohemia, NY
Perle Systems Ltd
Scarborough, ON
Canada
RCA Global Communications Inc
New York, NY
Scientific-Atlanta Inc
Satcom Division
Atlanta, GA
Singer Co
Librascope Div
Glendale, CA
Sytek Inc
Sunnyvale, CA
T-bar Inc
Wilton, CT
Telecommunications Techniques Corp
Gaithersburg, MD
TMI Systems Corporation
Lexington, MA
Tricom Inc
Frederick, MD
Tymnet Inc
Cupertino, CA
Ungermann-Bass Inc
Santa Clara, CA
Via West Inc
Rio Rico, AZ

SWITCHES, DATA COMMUNICATIONS: MANUAL

ADC DATA COMMUNICATIONS
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Alexandria, VA . . . . . ADV PG 79
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DATA SET CABLE CO INC
Ridgefield, CT . . . . . ADV PG 154
EPICOM INC
Altamonte Springs, FL . . . . ADV PG 85
GILTRONIX INC
Palo Alto, CA . . . . . ADV PG 155
HARBOR ELECTRONICS
Ridgefield, CT . . . . . ADV PG 153
INTERTEL INC
Andover, MA . . . . . ADV PG 80
T-BAR INC
Wilton, CT . . . . . ADV PG 159
ADC Data Communications
Minneapolis, MN
Atlantic Research Corp
Alexandria, VA
Black Box Catalog, Expandor Inc
Pittsburgh, PA
Boston Financial & Equity Corp
Boston, MA
Chess
Denver, CO
Codex Corporation
Mansfield, MA
ComData Corp
Morton Grove, IL
Compumart
Cambridge, MA
Datacomm Management Sciences Inc
East Norwalk, CT
Data Set Cable Co Inc
Ridgefield, CT
Data Switch Corporation
Norwalk, CT
DCD Telecommunications
Mansfield, MA
Digilog Inc
Horsham, PA
Digital Associates Corp
Stamford, CT
EECO Incorporated
Santa Ana, CA
Electrodata Inc
Bedford Heights, OH
Electronic Interface Assoc Inc
New York, NY
Epicom Inc
Altamonte Springs, FL
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
General Telephone Co of Wisconsin
Sun Prairie, WI
Giltronix Inc
Palo Alto, CA
Glasgal Communications Services Inc
Harrington Park, NJ
Gould Modicon Div
Andover, MA
Harbor Electronics
Ridgefield, CT
Hawaiian Telephone Co
Honolulu, HI
IDE Corp
Cleveland, OH
Indiana Bell Telephone Co.
Indianapolis, IN
Inmac
Santa Clara, CA
International Data Sciences Inc
Lincoln, RI
Intertel Inc
Andover, MA
Maxi-Switch Co
Minneapolis, MN
Memorex Corp Communications Group
Cupertino, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Micro Switch Div
Honeywell Inc
Freeport, IL
Muirhead Inc
Mountainside, NJ
Multi-Tech Systems Inc
New Brighton, MN
NCR Comten Inc
St Paul, MN
Northern Telecom Inc
Nashville, TN
Paradyne Corp
Largo, FL
Qytel
New York, NY
Remark International
Woodbury, NY
Rixon Inc
Silver Spring, MD
Support Systems International
Richmond, CA
T-bar Inc
Wilton, CT
Tek-Com
San Jose, CA
Telecommunications Techniques Corp
Gaithersburg, MD
Trompeter Electronics Inc
Chatsworth, CA
Vertex Electronics Inc
Farmingdale, NY
Via West Inc
Rio Rico, AZ
The Widget Works
St Augustine, FL

If you want to know what other products a company makes, turn to **Vendor Directory, page 301.**

UNINTERRUPTIBLE POWER SUPPLIES, LINE CORRECTORS, ETC

ELGAR CORP
San Diego, CA . . . . . ADV PG 161
Acran Inc
Austin, TX
Atlas Energy Systems
South El Monte, CA
Behlman Engineering Corp
Carpinteria, CA
Boschert Inc
Sunnyvale, CA
Burroughs Corp
Detroit, MI
California Instruments
Div of Norlin Industries
San Diego, CA
Chess
Denver, CO
Clary Corp
San Gabriel, CA
Complete Computer Systems
Horsham, PA
Computer Power Systems Corp
Carson, CA
Continental Power Systems Inc
Stamford, CT
Cyberex Inc
Mentor, OH
Deltec Corp
Div of Gould Inc
San Diego, CA
Dranetz Engineering Labs Inc
Edison, NJ
Elgar Corp
San Diego, CA
Emergency Power Engineering Inc.
Costa Mesa, CA
Emerson Industrial Controls Div
Santa Ana, CA
Exide Electronics Corp
Philadelphia, PA
Franklin Electric Programmed Power Div
Sunnyvale, CA
Gates Energy Products Inc
Denver, CO
Inmac
Santa Clara, CA
KeyTek Instrument Corp
Burlington, MA
Lambda Electronics
Melville, NY
Lorain Products Coproration
Lorain, OH
Nova Electric Mfg Co
Nutley, NJ
Powertec Inc
Chatsworth, CA
Shape Magnetronics Inc
Lombard, IL
Sola, A unit of General Signal
Elk Grove Vill, IL
Solid State Controls
Columbus, OH
Tab Products Co
Palo Alto, CA
Technipower
A Penril Co, Power Supplies
Danbury, CT

Teledyne Inet
Torrance, CA
Topaz DPP Div
San Diego, CA
Topaz, Inc/Topaz Electronics Div
San Diego, CA
Transtector Systems
Post Falls, ID

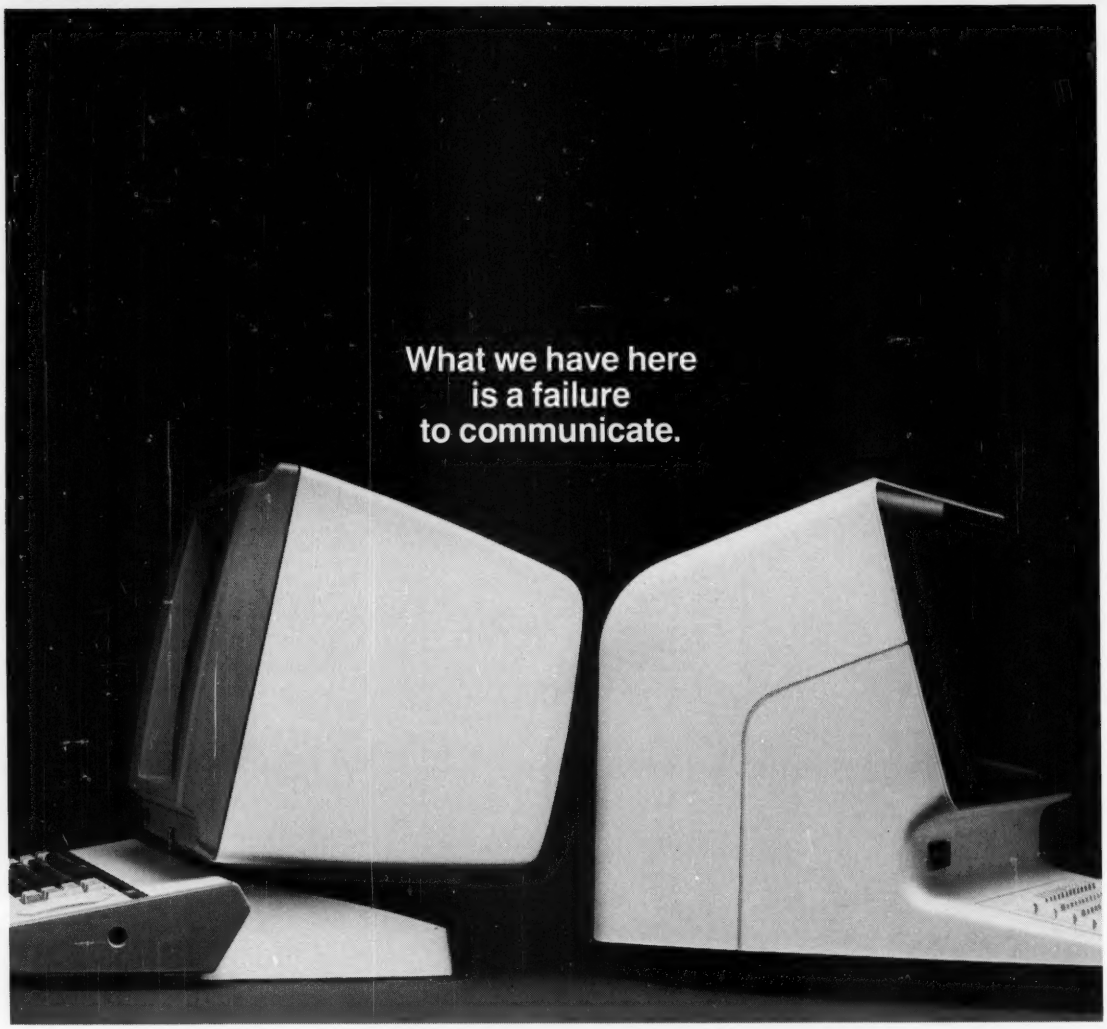
VOICE ADAPTERS

INTERTEL INC
Andover, MA . . . . . **ADV PG 80**
RACAL-MILGO
Miami, FL . . . . . **ADV PG 43**
Applied Delta Systems Inc
Bellmawr, NJ
Costronics Electronic
Hillington, Middlesex,
United Kingdom
Intertel Inc
Andover, MA
Master Specialties Co
Costa Mesa, CA
Micom-Borer Ltd
Reading, Berks R920JT,
England
Mostek Corp
Carrollton, TX
Paradyne Corp
Largo, FL
Racal-Milgo
Miami, FL
Rixon Inc
Silver Spring, MD
Time & Space Processing Inc
Santa Clara, CA

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

VOICE DIGITIZERS

CODEX CORPORATION
Mansfield, MA . . . . . **ADV PGS 83,95**
American Microsystems Inc
Santa Clara, CA
Centigram Corp
Sunnyvale, CA
Cincinatti Electronics Corp
Cincinatti, OH
Codex Corporation
Mansfield, MA
Cognitronics Corp
Stamford, CT
CSS Telecommunications
Mountain View, CA
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
E-Systems Inc
ECI Div
St Petersburg, FL
E-Systems Inc
Garland Div
Garland, TX
GTE Sylvania Systems/Voice Digitizers
Needham Heights, MA
Harris Corp
Controls Div
Melbourne, FL
Interstate Electronics Corp
Anaheim, CA
Loral Microwave
Communications—Terracom
San Diego, CA
Mostek Corp
Carrollton, TX
Motorola Semiconductor Prod
Phoenix, AZ
Paradyne Corp
Largo, FL
Precision Monolithics Inc
Santa Clara, CA
Signetics Corporation
Sunnyvale, CA
Telecommunications Techniques Corp
Gaithersburg, MD
Time & Space Processing Inc
Santa Clara, CA
Verbex
Bedford, MA



What we have here is a means to communicate.

The 303 Protocol and Code Translator

Your word processors aren't "talking" to each other...or to your IBM 6670 printer...or to your computers? Bridge this communication gap with the 303 Protocol and Code Translator from Racal-Telesystems. The 303 allows you to establish an entire network of word processors from different vendors. Through electronic on-line conversion of the highly specialized word processing codes, the 303 can accommodate a wide variety of protocols including Xerox 860; IBM Mag Card II, OS/6, 6670 printer; Wang; DEC; CPT 8000; NBI; AB Dick; Vydec; Dictaphone; AM Jacquard; Computer ASCII; and EBCDIC. And you'll find that the 303 can satisfy any number of applications. It can be used for straight conversion between two different word processing systems...convert the media of an old word processing system to that of a new and different system which has replaced it...aid in work sharing among different types of word processors...and increase the flexibility of your telecommunications system through data distribution and electronic mail. The 303 can even provide you with store and forward message switching capabilities when linked up to a large computer.

The 303 Protocol and Code Translator. It solves the problem of incompatibility in communicating word processors. For information call **Racal-Telesystems** *The Compatability Company* or write: Racal-Telesystems, 410 N. Michigan Ave., Chicago, IL 60611 (312) 329-0700.

NEW! RFI Shielded

EIA RS-232-C Data Cables

RS-232-C, The Solution . . . Not the Problem.

In compliance with newly released FCC emission limits, Harbor once again leads the telecommunications industry in shielded inter-unit cabling. Our completely shielded cable assembly, with improved cable specifications will contribute to the overall performance criteria of the equipment in which it is used. Designed and engineered specifically to minimize RFI, the RS-232 is an efficient and economical solution to your equipment assemblies.

When considering your cable assembly needs, consider Harbor.

Twelve conductor, 2 meter version as low as $17.25. Samples and quotations available.

Features:

- **Totally shielded connectors**
- **Braid/foil cable construction**
- **Custom pinning available**
- **Logo insert**
- **Indent connectors for reliable contact to ground**
- **Low profile backshell**
- **Volume pricing**

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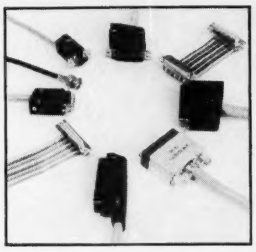
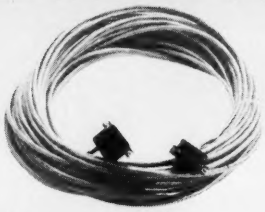
dscc · For ALL your interface cable needs · dscc



Quick Service Priced Right Dependable

One source for nearly 200 cable and connector combinations for every possible application. These are just a sampling.



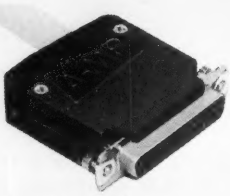
Extended EIA Data Cables Up to 250 Feet in Length

Data Set was No. 1 to offer them—with a long and unbroken record of customer satisfaction, still your best choice! There are some customers using 500 feet or more at 9,600 BPS.

In operation all over the country with positive results in every location. It has enabled companies to expand tech controls, make floor-to-floor installations and to make use of otherwise valuable wasted space.

Available with 6, 12, 18 and 25 conductors.

EDC06 ..... **$14.50 plus 35¢/foot**
EDC12 ..... **$17.00 plus 55¢/foot**
EDC18 ..... **$18.50 plus 75¢/foot**
EDC25 ..... **$18.50 plus 90¢/foot**



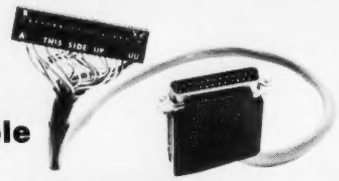
EIA RS-232-C

The most frequently used cable

In normal applications, many of the 25 connector pins are not used. DSCC now offers the EIA RS-232-C cable with 25-, 16-, 12- and 7-conductor cable, giving you the opportunity to save when fewer conductors are needed.

EIA25—25 conductor cable, all connected ..... **$16 plus 50¢/foot**
EIA16—16 conductor cable ..... **$14 plus 40¢/foot**
EIA12—12 conductor cable ..... **$13 plus 30¢/foot**
EIA07—7 conductor cable ..... **$12.50 plus 25¢/foot**

25-Pin cables **in stock** in lengths to 50 ft.



DEC Compatible Cables

We regularly supply 15 different ones—including this BC05C TYPE

EIA male to 44 pin connector terminal cable; used with DL11-B, D, E, DW11-DA, DFC11-A. Used with synch or asynch operation. Specify when female EIA connector is required ..... **$18.00 plus 50¢/foot**

—Also a big selection of TI, TIMEPLEX and HP compatible cables—

Accessories

ABC Switch Box

Allows you to switch from a single source to either of two other pieces of equipment; or from either of two sources to a single terminal or similar piece of equipment. Dimensions: 6½″ × 2¼″ × 6″

ABC Switch Box **$99.50**

Call or write for quote to your specifications.

Wall Outlet Plates for RS-232 Connectors

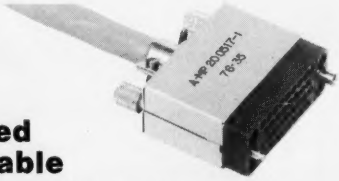
Same dimensions as single electrical box covers—2¾″ × 4½″.

SWP01 (single slot) **$4.00**
SWP02 (two slots) **$4.50**

RJP-19 Junction Panels

Junction Panel, is 19″ long for rack-mounting.

RJP-19 Junction panel . **$55.00 plus wiring and connectors**
D-15AP Adaptor ..... **$5.50 without connector**



V-35 High-Speed Modem Cable

This cable is used on the Bell Type 306 and is being expanded to other **Modems.** Since the pinning requires only 18 conductors, we use our high quality, low capacitance EDC18 cable.

V-35 (18) LO-CAP ..... **$44.50 plus 75¢/foot**
V-35 (34) Standard ..... **$47.00 plus 75¢/foot**

Coax Cables For CRT's

CC62 uses RG62A/U cable with UG260/U connectors (Amphenol part no. 31-212)

CAC62 ..... **$8.00 plus 15¢/foot**

CC59 uses RG59B/U cable with UG260/U connectors

CAC59 ..... **$8.00 plus 15¢/foot**

call or send for catalog

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dscc The Company with a lot of Connections
Data Set Cable Company, Inc.

West
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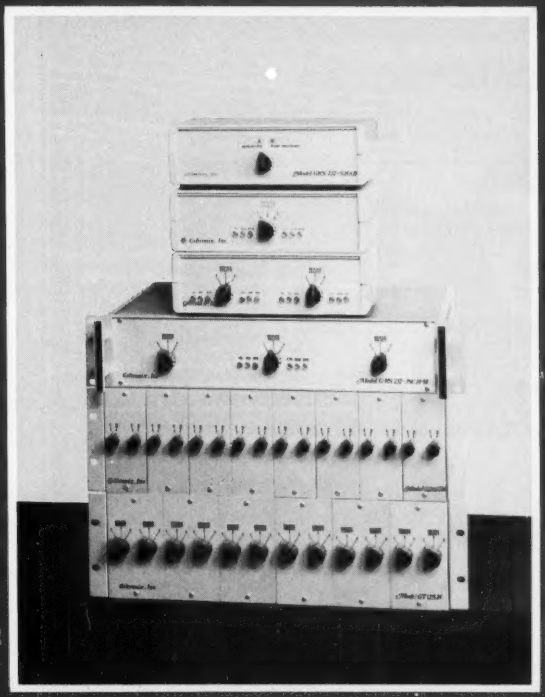
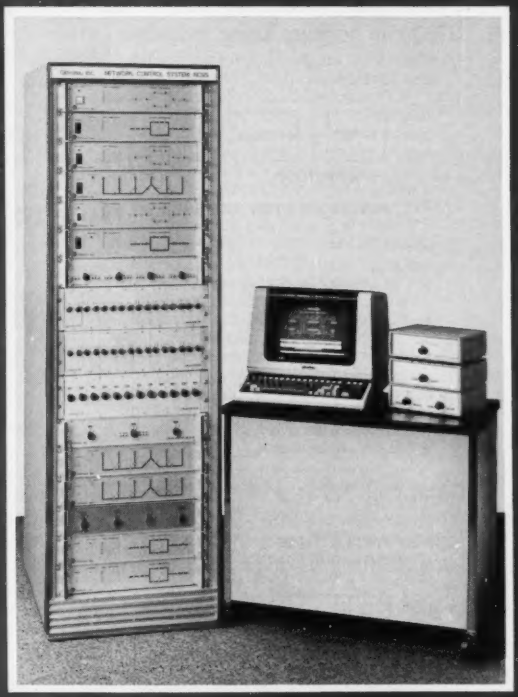
(702) 382-6777

From "ABC" to "XYZ"

Switches — Custom Systems





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- Port Sharing Units
- Transfer Switches
- Monitoring Units
- Crossover Switches
- Network Controllers
- Backup Switches
- GPCB—Controllers
- Fall Back Switches
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- Current Loop Units
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With DataLynx™ Protocol Convertors

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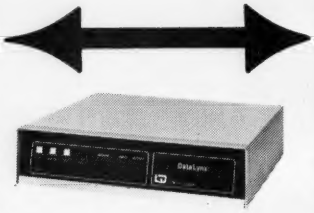
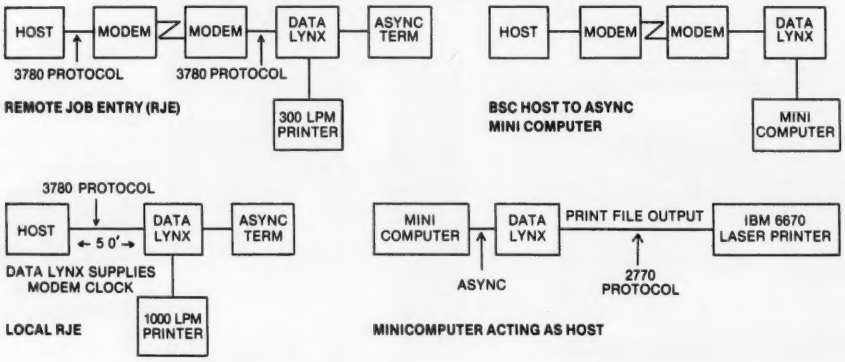
TI-810	Radio Shack
TI-820	Point 4
ADM-3A	Pertec
Teletype 40	Data General
VT-100	Any async mini



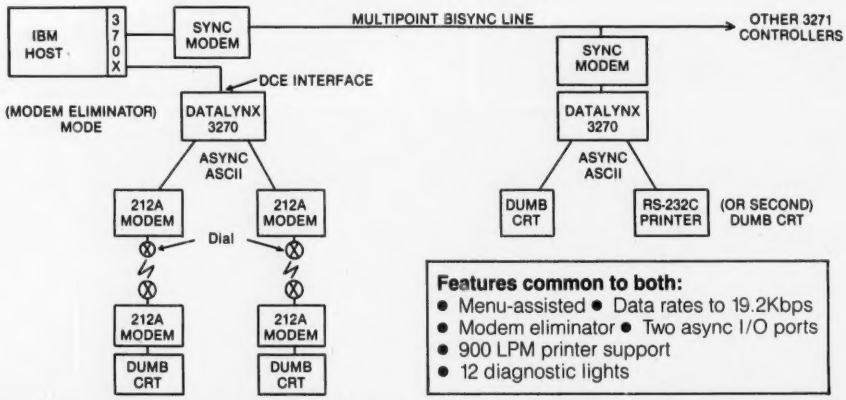
BISYNC	
IBM 360	3741
IBM 370	3780
IBM 3033	6670
IBM Sys 38	2770
IBM Sys 34	2780
IBM Sys 3	OS 6
IBM 43XX	

DataLynx/3780: a comprehensive batch emulator for remote or host simulation. The DataLynx/3780 can connect async terminals or minicomputers to an IBM bisync host, or an async minicomputer to an IBM bisync peripheral such as the OS6 or 6670 laser printer.

TYPICAL APPLICATIONS



DataLynx/3270: an interactive 3271-2 bisync emulator that supports two async ports configurable as two CRTs or a CRT and printer. The DataLynx/3270 allows dumb CRTs to emulate the IBM 3277-2 CRT. The CRTs may be connected via *dial-up async* modems, giving dial capability to a 3270 network.



Features common to both:
- Menu-assisted
- Data rates to 19.2Kbps
- Modem eliminator
- Two async I/O ports
- 900 LPM printer support
- 12 diagnostic lights

COMING IN 1982! Type A Adapter will convert IBM coax protocol and code (used on IBM 3274 and 3276 controllers) into RS 232C or parallel printer format. Will have state-of-the-art microprocessors, memories and interface circuitry. Call or write Local Data. It may be ready when you need it!

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Phone (213) 320-7126

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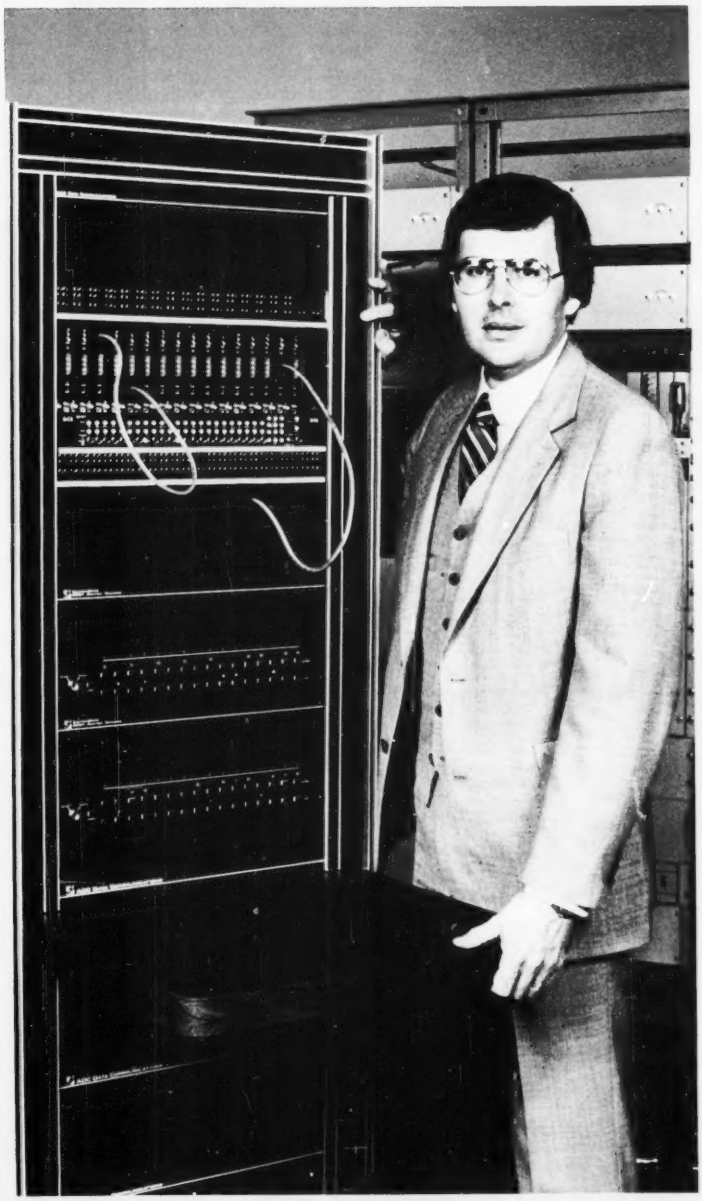


Russ McKee
Product Manager, data patching

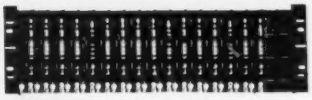
We designed our new patch for data communication managers who need to access, test, monitor, restore, and reconfigure RS 232/V.24 circuits.

This new patch uses minimum rack space, but provides monitor, alarm, and patching capability in the standard 5¼ inch rack height.

LED status indicators provide network operators with immediate circuit operation monitoring of eight RS 232/V.24 signal leads (DTR, DSR, RTS, CTS, DCD, TD, RD, SQ). Line or equipment failure is signaled by audible and visual "loss of carrier" alarm built into the monitoring capabilities of each module.

Sixteen modules wide, this modular patch system lets you add or interchange modules on a single circuit basis providing growth and flexibility at a low cost per circuit. Patching options include VF access and patching without LED's and alarms.

For immediate and detailed information on ADC's new data patching systems, access and test systems, and engineering and application assistance call our toll-free number now. 1-800-328-6188. In Minnesota, call (612) 835-6800. Telex 29-0321. TWX 910-576-2382.



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Diagnostic Loop Back Cables

Loop back diagnostic cables provide for routing all output signals to all input signals. An error condition will be indicated as a specified test number and displayed by the seven segment LED. Further actuation of the diagnostic test switch will allow for fault isolation to the "chip" level. This fault isolation technique eliminates classical "finger pointing" when the network goes down.

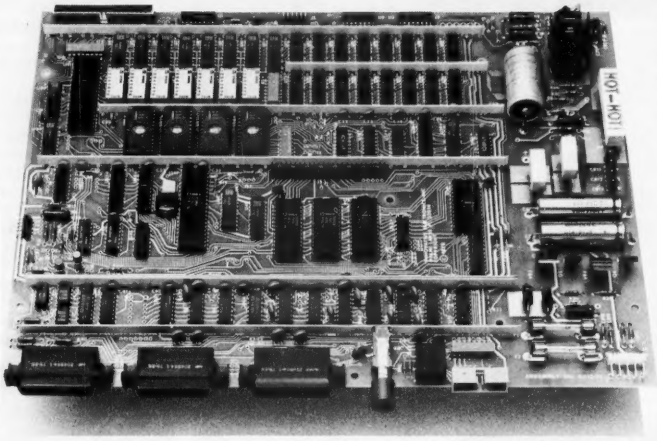
Async/Sync RS-232 Serial, Parallel 300 LPM Printers

The "Innovator" line printer family consists of both 80 and 132 column printers utilizing the heavy duty impact chain print technology. Fully formed clear upper and lower case characters are generated on up to six copies.

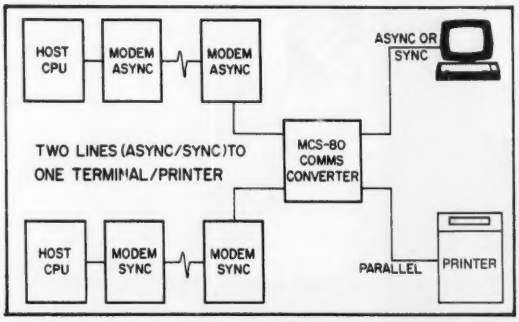
MCS-80 Protocol Converter

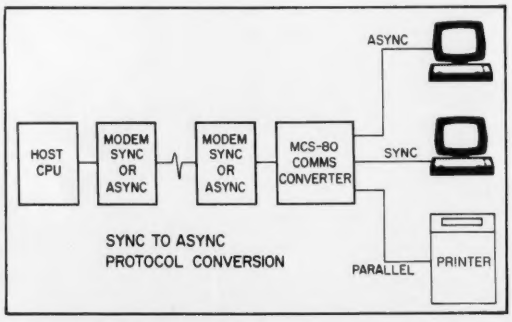
The MCS-80 multiport protocol converter enables intercommunication of data between multiple computers or terminals using different line discipline protocols. Protocol converters are fully self contained and allow complete transparency and connection of terminals to most popular IBM, Univac, Honeywell, Burroughs and NCR computers.

The MCS-40 interface is a micro processor based controller that is the heart of all IEI communications products. Thousands of these interface boards have been shipped and are operational in the field. All external connections are PC board mounted, thereby eliminating most cabling problems. The 8085 micro processor provides for extensive diagnostic capability and self test checking.



- *8085 Microprocessor, 10 mhz
- *16K EPROM
- *16K Static RAM
- *56 Program Switches
- *Self Contained Power Supply
- *Seven Segment LED Display for Diagnostic and System Status
- *Three Serial RS-232/CL Ports
- *Async/Sync
- *One Buffered Parallel Port for Keyboard, Tape, Printer, or LED's
- *Nationwide Service





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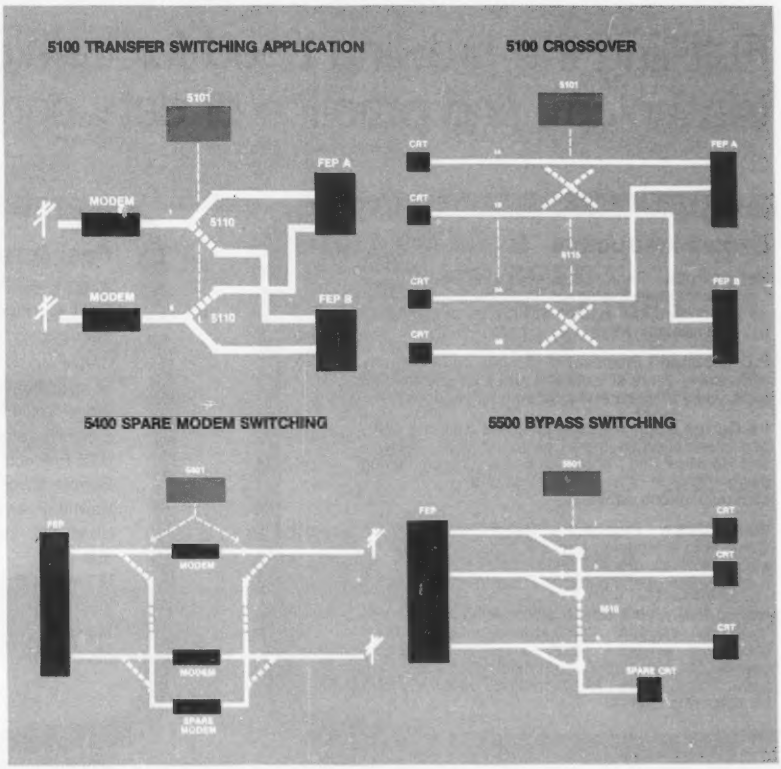

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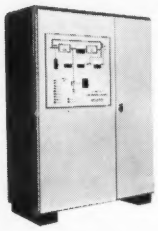
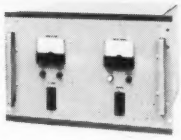

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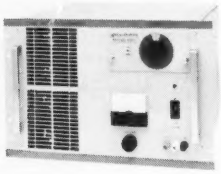
0.5 TO 45KVA, SINGLE AND THREE PHASE.

Elgar's UPS include rectifier/charger, battery, inverter, synchronizing and switching equipment to assure precise, uninterruptible power to critical loads. Typical performance includes 1% voltage regulation, 5% maximum total harmonic distortion. Elgar's Inverters, rated 1.0 to 30KVA, single and three phase, have similar applications. Several Inverter and UPS models have been qualified for NUCLEAR Class IE applications.



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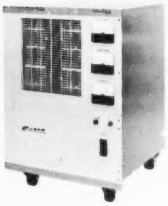
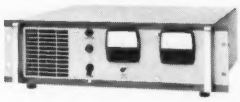
Elgar's AC Power Sources provide fixed, variable, or programmable output voltages and frequencies with the largest number of single-, two- or three-phase models available. Specifications include 25 microseconds response time, 0.4% maximum distortion and 0.1% regulation.

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HIGH-SPEED (10 μSEC.) REGULATION, TRANSIENT FILTERING, WAVEFORM CORRECTION, 1KVA TO 15KVA.

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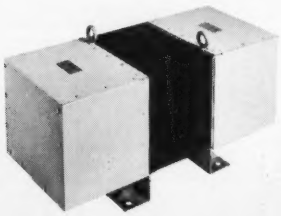
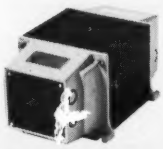
LESS THAN ONE CYCLE RESPONSE TIME. PROVIDES ISOLATION AS WELL AS VOLTAGE REGULATION FOR CRITICAL LOADS.

Elgar's new PLC series conditioners provide a low cost alternative for furnishing critical loads with clean regulated power. For input voltage variations of +12.5%/−20.8%, the output voltage is 120VAC ±5%. The units provide a minimum of 140dB of common mode noise attenuation. Power ratings start at 1.0KVA.

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1KVA TO 60KVA MODELS PROVIDE UP TO 146dB OF COMMON-MODE NOISE ATTENUATION.

Elgar's HITs are triple-shielded transformers with tightly controlled interwinding capacitance (to 0.0005pF) to virtually eliminate common-mode line noise and other line transients. All HITs are available from stock.

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U S Instrument Rentals
San Mateo, CA

MAINTENANCE ORGANIZATIONS

GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
Schenectady, NY . . . . . ADV PG 167
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
SORBUS SERVICE DIV OF MAI
Frazer, PA . . . . . ADV PG 168
TELETYPE CORP
Skokie, IL . . . . . ADV PG 129
Alanthus Data Communications Corp
Rockville, MD
Altos Computer Systems
San Jose, CA
AM Jacquard Systems
Santa Monica, CA
Anderson Jacobson, Inc
San Jose, CA
Ardent Computer Products
Dobbs Ferry, NY
BMS Data Handling Inc
Riverside, CA
The Braegen Corp
Cupertino, CA
W A Brown Instruments
Orlando, FL
Burroughs Corp
Detroit, MI
C & L Terminals Inc
Portland, OR
California Computer Products Inc
Anaheim, CA
Cambex Corporation
Waltham, MA
Carterfone Communications Corp
Dallas, TX
Chess
Denver, CO
Cincom Systems Inc
Cincinnati, OH
Compal Inc
Beverly Hills, CA
Compumart
Cambridge, MA
Computer Sciences Corp
El Segundo, CA
Comtek Inc
San Antonio, TX
Control Data Corp
Minneapolis, MN
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Datapoint Corporation
San Antonio, TX
Datatrol Inc
Hudson, MA
Delta Data Systems
Trevose, PA
Digital Associates Corp
Stamford, CT
Dominick Tarricone & Co
Commack, NY
Envax Corporation
Irving, TX
Formation Inc
Mt Laurel, NJ
General Automation
Anaheim, CA
General Electric Co/
Communication Equipment Leasing and Service
Schenectady, NY
General Telephone Co of the Northwest
Everett, WA
Gould Modicon Div
Andover, MA
Grumman Data Systems Corp
Woodbury, NY
Hawaiian Telephone Co
Honolulu, HI
Heath Co
Benton Harbor, MI
Hetra Computer & Communications
Industries Inc
Melbourne, FL
Hewlett-Packard Co
Palo Alto, CA
Hewlett-Packard
Desktop Computer Div.
Ft. Collins, CO
Honeywell Information Systems
Waltham, MA
Infolink Corp
North Brook, IL
The David Jamison Carlyle Corp
Los Angeles, CA
Logical Machine Corporation
Sunnyvale, CA
Lorain Products Coproration
Lorain, OH
Memorex Corp Communications Group
Cupertino, CA
Modular Computer Systems
Fort Lauderdale, FL
Mohawk Data Sciences Corp
Parsippany, NJ
MSI Data Corp
Costa Mesa, CA
National Data Corp
Atlanta, GA
NCR Comten Inc
St Paul, MN
NCR Corp
Dayton, OH
Nuclear Engineering Services Co
Sunnyvale, CA
Omnitec Data
Phoenix, AZ
Periphonics Corp
Bohemia, NY
Pertec Computer Corp
Los Angeles, CA
Pertec Computer Corp
Peripherals Div
Chatsworth, CA
Plessy Peripheral Systems
Irvine, CA
Precision Communications Services Inc
Tampa, FL
Prime Computer Inc
Natick, MA
Racal-Milgo
Miami, FL
Radian Corp-Unitech Products
Austin, TX
Raytheon Service Co
Burlington, MA
RCA Service Co
Data Services
Cherry Hill, NJ
Selecterm Inc
Wakefield, MA
Siemens Corp
Iselin, NJ
Sorbus Service Div of MAI
Frazer, PA
Sperry Univac, MCO
Irvine, CA
Stromberg-Carlson Corp
Sanford, FL
Subsystem Engineering
Santa Ana, CA
System Industries
Sunnyvale, CA
Tandem Computers
Cupertino, CA
Telecom Systems Group
Cedar Grove, NJ
Teleray Div
Research Inc
Minneapolis, MN
Teletype Corp
Skokie, IL
Tel-Tex Inc
Houston, TX
Terminal Data Corp
Rockville, MD
Terminal Rentals Inc
Orange, CA
The TRW-Fujitsu Co
Los Angeles, CA
TRW Customer Service Div
Fairfield, NJ
Wang Laboratories Inc
Lowell, MA
The Western Union Telegraph Co
Upper Saddle River, NJ

NETWORK SIMULATION SERVICES

ESP DIGITAL SYSTEMS CORP
Des Moines, IA . . . . . ADV PG 82
NORTHERN TELECOM INC
SPECTRON DIV
Moorestown, NJ . . . . . ADV PGS 76-77
Computer Sciences Corp
El Segundo, CA
Comtek Inc
San Antonio, TX
CRC Systems Inc
Fairfax, VA
The DMW Group Inc
Ann Arbor, MI
Dominick Tarricone & Co
Commack, NY
ESP Digital Systems Corp
Des Moines, IA
4-Degree Consulting
Macon, GA
Illinois Bell Telephone Co.
Chicago, IL
Network Analysis Corp
Great Neck, NY
Northern Telecom Inc
Spectron Div
Moorestown, NJ
Page Communications Engineers Inc
Vienna, VA
Systems Architects Inc
Randolph, MA
Systems Research Laboratories Inc
Dayton, OH
Telecom Systems Group
Cedar Grove, NJ
TeleProcessing Products Inc
Simi Valley, CA
Wang Laboratories Inc
Lowell, MA

TIMESHARING/SERVICE BUREAUS

Boeing Computer Services Company
Morristown, NJ
Compumart
Cambridge, MA
Computer Sciences Corp
El Segundo, CA
Computer Sharing Services
Denver, CO
Comshare Inc
Ann Arbor, MI

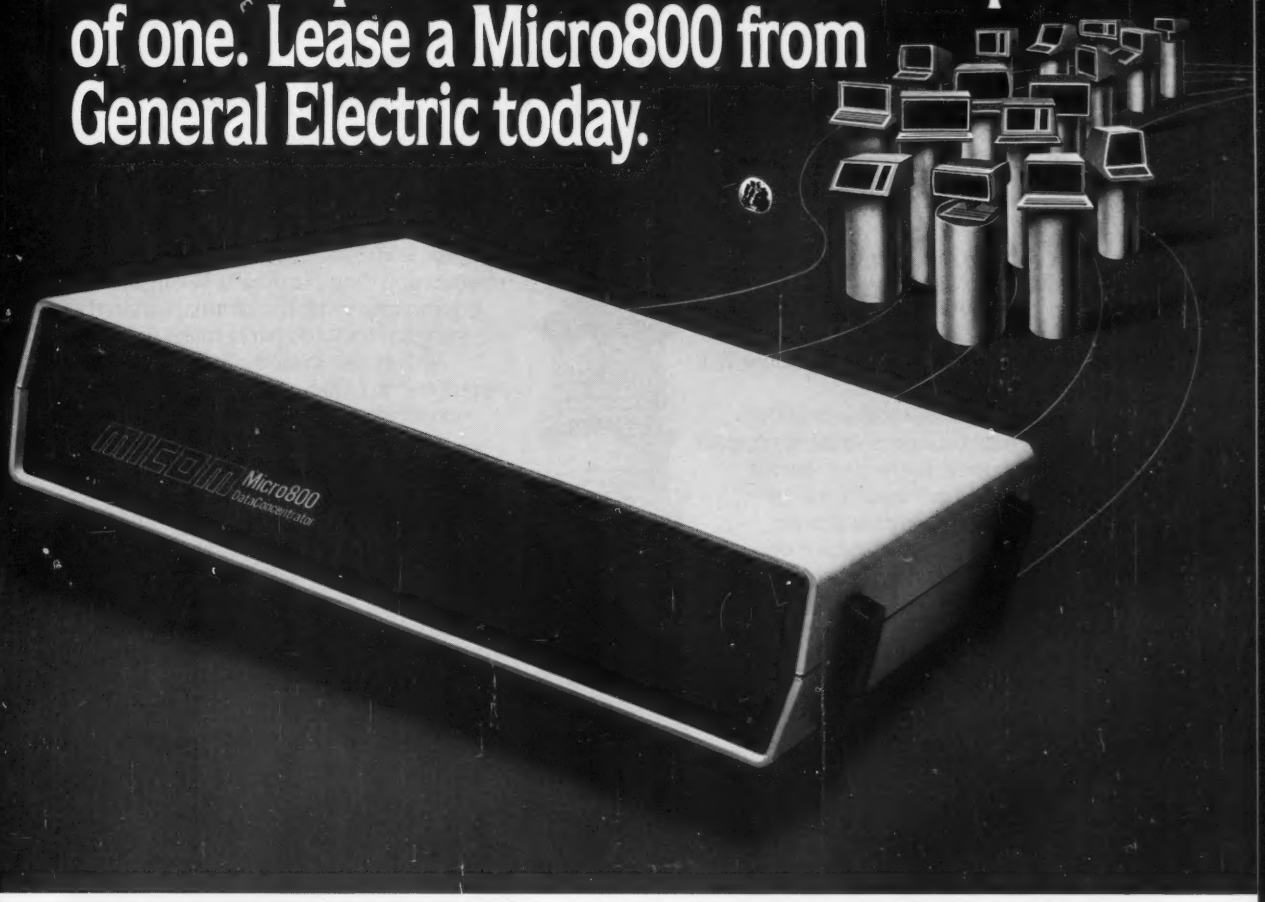
Comtek Inc
San Antonio, TX
Control Data Corp
Minneapolis, MN
Cubic Corp
San Diego, CA
Cullinane Database Systems, Inc
Westwood, MA
Data Technology Inc
Boston, MA
The DMW Group Inc
Ann Arbor, MI
DTSS Incorporated
Hanover, NH
General Electric Information Services Co
Rockville, MD
Honeywell Information Systems
Waltham, MA
Informatics Inc
Woodland Hills, CA
Interactive Information Systems Inc
Cincinnati, OH
The Leasemark Corporation
Boston, MA
Manufacturing Data Systems Inc
Ann Arbor, MI
National Data Corp
Atlanta, GA
NCR Corp
Dayton, OH
Raytheon Service Co
Burlington, MA
STSC Inc
Bethesda, MD
Systems Architects Inc
Randolph, MA
Telephone Mgmt Systems
Waltham, MA
Wang Laboratories Inc
Lowell, MA
Xerox Corporation
Stamford, CT

USED EQUIPMENT

CODEX CORPORATION
Mansfield, MA . . . . . ADV PGS 83,95
RACAL-MILGO
Miami, FL . . . . . ADV PG 43
Alanthus Data Communications Corp
Rockville, MD
Anderson Jacobson, Inc
San Jose, CA
Boston Financial & Equity Corp
Boston, MA
Carterfone Communications Corp
Dallas, TX
Codex Corporation
Mansfield, MA
Computer Transceiver Systems Inc
Paramus, NJ
Comtek Inc
San Antonio, TX
Data Dimensions Inc
Norwalk, CT
Data Equipment Inc
Sunnyvale, CA
Data Rentals/Sales Inc
Culver City, CA
Digital Associates Corp
Stamford, CT
Digital Equipment Corporation
Maynard, MA
Electro Rent
Burbank, CA
Envax Corporation
Irving, TX
ESE Ltd, Subsidiary of Codex Corp
Rexdale, Ontario
Canada
Formation Inc
Mt Laurel, NJ
General Automation
Anaheim, CA
IDE Corp
Cleveland, OH
Information Technology Inc
Needham, MA
The David Jamison Carlyle Corp
Los Angeles, CA
Lawrence Packaging Supply Corp
Newark, NJ
Leasametric
Foster City, CA
Omnitec Data
Phoenix, AZ
Precision Communications Services Inc
Tampa, FL
Qytel
New York, NY
Racal-Milgo
Miami, FL
RCA Service Co
Data Services
Cherry Hill, NJ
Selecterm Inc
Wakefield, MA
System Industries
Sunnyvale, CA
Telex Marketing Company Div of North American Telecommunications Corp
Culver City, CA
Tel-Tex Inc
Houston, TX
Terminal Data Corp
Rockville, MD
U S Instrument Rentals
San Mateo, CA
The Western Union Telegraph Co
Upper Saddle River, NJ

Companies are listed alphabetically with all needed information in the **Vendor Directory, page 301.**

Connect up to 16 terminals for the price of one. Lease a Micro800 from General Electric today.



General Electric's broad line of data communication equipment for lease now includes MICOM's new Micro800 data concentrator.

The Micro800 is an intelligent multiplexor that allows you to run up to 16 asynchronous data terminals through a single telephone line, error-free—with better than double the efficiency of a conventional TDM.

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When you lease any data communication equipment from GE—modems, teleprinters, line printers, portable printers, CRTs, acoustic couplers, intelligent terminals, concentrators and more—you get full GE service support from more than 60 locations, nationwide. We analyze, lease, deliver, install, answer your call, maintain, stock and repair.

If you aim to keep up with the best, let's get communicating today.

CALL THIS TOLL FREE NUMBER:
(800) 528-6050 Ext. 406
In Arizona call (800) 352-0458 Ext. 406

Or write to General Electric Company, Section 560-101, Schenectady, NY 12345

Clip and save this number and address for all your data communication needs.

GENERAL ELECTRIC

Sorbus services Portland, Portland, Portland, Portland, and Portland.

That's Texas, Connecticut, Indiana, Michigan, and of course, Oregon.

We've built our reputation by providing prompt, first-class computer service to clients wherever they may be – across the hall or across the country.

The readers of Datamation and Data Communications magazines must appreciate that kind of attention, for in every brand preference survey conducted since 1974, they've selected MAI's Sorbus Service Division as the number one service company – the third party service company they'd most prefer to do business with.

That same good feeling carries over to the OEM market, where Sorbus is the service arm for over 50 manufacturers. Why?

Because Sorbus takes full responsibility for maintaining their hardware. We install the equipment; write the manuals; train the people; stock the parts; make the calls.

Sorbus also knows a little about IBM equipment. In fact, we service more IBM systems than anybody else – except for IBM themselves.

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So, no matter where you are today, or where you'll be tomorrow, Sorbus service isn't far away.

In fact, we're probably already there.

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Sorbus Service Division of MAI
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Data Communications Update Service

Data Communications UpDate Service

1. To obtain further information on advertised products from any of the participating companies listed below, simply check Box Number 1 on the card facing this page, fill in appropriate company code number, and write in name of specific product in which you are interested.

2. To be put on mailing lists for new product announcements from any company below, check Box Number 2 on card, fill in company code number, and write in specific product area in which you're interested.

Please complete the entire card, including your industry classification and job function.

List of participating companies (Code number appears to left of company name):

01 ADC/Division Of Magnetic Controls Company
02 ARK Electronic Products, Inc.
03 Associated Computer Consultants
04 Astrocom Corporation
05 Atlantic Research Corporation
06 Bo-Sherrel Co.
07 Codex Corporation
08 Com Design, Inc.
09 Compre Comm, Inc.
10 Computer Devices, Inc.
11 Comtech Data Corporation
12 Cylix Communications Network
13 Data Communications Institute
14 Data General Corporation
15 Data Set Cable Co.
16 Digital Communications Associates, Inc.
17 Digital Communications Corp., Division of M/A-COM, Inc.
18 Dynatech Data Systems
19 Elgar Corporation
20 Epicom, Inc.
21 ESP Digital Systems Corporation
22 Ex-Cell-O Corp., Remex Div.
23 Gandalf Data, Inc.
24 General DataComm Industries, Inc.
25 General Electric Co., Apparatus Service Division
26 Giltronix, Inc.
27 Halcyon, Inc.
28 Harbor Electronics
29 Infotron Systems Corp.
30 Innovative Electronics, Inc.
31 Intertel, Inc.
32 Lanier Business Products
33 Local Data
34 3M—Interactive Systems Division
35 Micom Systems, Inc.
36 Modemsplus, Inc.
37 Motorola, Inc., Government Electronics Division
38 Nixdorf Computer Corporation
39 Northern Telecom Systems Corp., Spectron Division
40 Penril Corporation
41 Prentice Electronics
42 Racal-Milgo, Inc.
43 Racal-Vadic
44 Racal-Telesystems
45 Sorbus, Inc.
46 T-bar
47 Technical Analysis Corporation
48 Teletype Corporation
49 Timeplex, Inc.
50 Tran Telecommunications Corp., an Amdahl Company
51 Universal Data Systems

Data Communications UpDate Service

Expires: Dec. 1982

Name _____ Title _____

Company _____

Address _____ City _____

State _____ Zip Code _____

Please check PRIMARY INDUSTRY CLASSIFICATION:

A ☐ **Finance:** such as Banking, Real Estate, Insurance, or Brokerage.
B ☐ **Computers & Peripherals Manufacturing:**
C ☐ **Other Manufacturing & Construction:**
D ☐ **Process Industries:** such as Petroleum, Minerals, Chemicals, Forest Products, Food, or Drugs.
E ☐ **Distribution:** such as Wholesale, Retail Restaurant or Food Chains.
F ☐ **Transportation:** such as Rail, Bus, Marine, Shipping, Auto Rental, Airline, Trucking, or Air Freight.
G ☐ **Utilities:** such as Energy, Communications, Common Carriers, Pipelines.
H ☐ **Computer Services:** such as Time Sharing, Data Processing, Software, or Consulting.
I ☐ **Personal & Business Services:** such as Health, Legal, Education, Hotel, or Recreation.
J ☐ **Public Administration:** including Federal, State, Municipal, or County.
K ☐ **Other Industries:** such as Mining, Agriculture, Forestry or Fishing.
L ☐ **Other,** please specify: _____

Please check PRINCIPAL JOB FUNCTION:

S ☐ Corporate Planning & Development
T ☐ Data Communications Planning
W ☐ Data Communications Operations
X ☐ Data Processing Planning
Y ☐ Data Processing Operations
Z ☐ Systems Implementation

☐ **1. Please send me further information on these advertised products.**

Company code numbers		Product/Service
_____	on	_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____

(Company code numbers are listed on preceding page.)

☐ **2. Please place me on mailing list to receive new product information as it becomes available.**

Company code numbers		Product/Service
_____	on	_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____

Data Communications Buyers' Guide A

Data Communications UpDate Service

Expires: Dec. 1982

Name _____ Title _____

Company _____

Address _____ City _____

State _____ Zip Code _____

Please check PRIMARY INDUSTRY CLASSIFICATION:

A ☐ **Finance:** such as Banking, Real Estate, Insurance, or Brokerage.
B ☐ **Computers & Peripherals Manufacturing:**
C ☐ **Other Manufacturing & Construction:**
D ☐ **Process Industries:** such as Petroleum, Minerals, Chemicals, Forest Products, Food, or Drugs.
E ☐ **Distribution:** such as Wholesale, Retail Restaurant or Food Chains.
F ☐ **Transportation:** such as Rail, Bus, Marine, Shipping, Auto Rental, Airline, Trucking, or Air Freight.
G ☐ **Utilities:** such as Energy, Communications, Common Carriers, Pipelines.
H ☐ **Computer Services:** such as Time Sharing, Data Processing, Software, or Consulting.
I ☐ **Personal & Business Services:** such as Health, Legal, Education, Hotel, or Recreation.
J ☐ **Public Administration:** including Federal, State, Municipal, or County.
K ☐ **Other Industries:** such as Mining, Agriculture, Forestry or Fishing.
L ☐ **Other,** please specify: _____

Please check PRINCIPAL JOB FUNCTION:

S ☐ Corporate Planning & Development
T ☐ Data Communications Planning
W ☐ Data Communications Operations
X ☐ Data Processing Planning
Y ☐ Data Processing Operations
Z ☐ Systems Implementation

☐ **1. Please send me further information on these advertised products.**

Company code number		Product/Service
_____	on	_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____

(Company code numbers are listed on preceding page.)

☐ **2. Please place me on mailing list to receive new product information as it becomes available.**

Company code number		Product/Service
_____	on	_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____

Data Communications Buyers' Guide B

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New York, New York 10020

Vendor Directory

ABW CORP
PO Box M1047
Ann Arbor, MI 48106
313-971-9364
Contact: Jill L King
■ Products & Services
Graphic display terminals
Data communications consultants

ACRAN INC
4123 Todd Ln
Austin, TX 78744
512-441-9590
Contact: Paul Metzger
■ Products & Services
Uninterruptible power supplies, line correctors, etc

ACRO CORPORATION
18003-L Sky Park South
Irvine, CA 92714
714-557-5118
Contact: Harry Slam
■ Products & Services
Data entry terminals
Graphic display terminals
Interactive terminals
Remote line printers
Teletypewriters
Video data terminals (KSR)
Branch Sales Offices:
IL Chicago
ACRO Corporation
9400 W Foster Ave
312-992-2340
NJ Maple Shade
ACRO Corporation
1000 Maplewood Dr
609-667-4114
TX Houston
ACRO Corporation
9898 Bissonnet Bldg 1
713-777-1640

ADAGE INC
One Fortune Drive
Billerica, MA 01821
617-667-7070
Contact: Ray Barger
■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
CA Los Angeles
Adage, Inc
1801 Ave of the Stars
213-553-6341
CA Sunnyvale
Adage, Inc
599 North Mathilda Ave
408-736-8683
CO Englewood
Adage Inc
5680 S Syracuse Cr
303-779-6194
GA Norcross
Adage, Inc
3169 Holcomb Rd
404-447-8365
IL Schaumburg
Adage Inc
957 North Plum Grove Rd
312-843-7566
MD Laurel
Adage, Inc
910 Lower Fairlawn Mall
301-953-9158
MI Southfield
Adage Inc
25511 Southfield Rd
313-567-7505
MO St Louis
Adage Inc
555 North New Ballas Rd
314-863-4800
NY Wantagh
Adage Inc
3375 Park Ave
516-781-5800
NY Amherst
Adage, Inc
4248 Ridge Lea Rd
716-835-8001
OH Cincinnati
Adage Inc
4030 Mount Carmel-Tobasco Rd
513-528-2770
TX Dallas
Adage Inc
12900 Preston Rd
214-387-0972
WA Everett
Adage Inc
7600 Evergreen Way
206-347-3978
GERMANY, WEST
3300 Braunschweig
Adage
Rittenbrunnen F
GERMANY, WEST
7012 Fellbach
Adage GmbH
Guttenberg Strasse 14

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

ADC DATA COMMUNICATIONS
4900 W 78th St
Minneapolis, MN 55435
612-835-6800
Advertising page 157
Contact: Frank Mara
■ Products & Services
Data content monitors
Network management centers
Technical control centers
Cables, electrical prefabricated extending
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:
CA Novato
Edward T Driscoll
180 Montura Way
415-883-0353
CA Torrance
Allen Edwards Associates, Inc
2808 Oregon Ct, Building L-6
213-328-9770
FL Indian Harbour Beach
General Technology, Inc
415 Palm Spring Rd
305-777-1133
IL Arlington Heights
KNE Resources Corp
415 West Golf Rd
312-228-5850
MD Washington Grove
Wiltronix
16850 Oakmont Ave
301-258-7676
MA Framingham
Data Comm Associates Inc
22 Aberdeen Rd
617-877-2984
MN Minneapolis
RAE Associates Inc
7317 Cahill Rd
612-941-3221
NY Great Neck
Harvey J Drasner Associates, Inc
87 Water Mill Ln
516-487-0690
OH Columbus
Gerhard And Associates
1384 Grandview Ave
614-488-9751
TX Richardson
ADC
1200 Executive Dr E
214-699-1115
TX Houston
COMSPEC
10000 Old Katy Rd
713-461-4487
WA Bellevue
Thorson Company Northwest
12301 NE 10th Pl
206-455-9180

ADDMASTER CORP
416 Junipero Serra Dr
San Gabriel, CA 91776
213-285-1121
Contact: Louis Doshay
■ Products & Services
Tape, paper
Tape punch/reader, paper
Branch Sales Offices:
CA Los Altos
Systems Marketing Consultants
Box 1376
415-941-7122
IL Chicago
Scientific Sales
7257 W Touhy St
312-775-7595
NJ Ridgewood
Instrumentation Sales
171 E Ridgewood Ave
201-445-5210

ADVANCED ELECTRONICS DESIGN INC
440 Potrero Av
Sunnyvale, CA 94086
408-733-3555
Contact: Gary Wilson
■ Products & Services
Disk drives, floppy
Disk drives, large
Graphic display terminals
Computer/communications interfaces
Branch Sales Offices:
CA Tarzana
Advanced Electronics Design
18730 Oxnard St
213-705-0379
MA Chelmsford
Advanced Electronics Design
9 Acton Rd
617-256-1700

ADVANCED MICRO DEVICES
901 Thompson Place
Sunnyvale, CA 94086
408-732-2400
Contact: Jim Miller

■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Microcomputer/ microprocessor systems
Data security devices: encoder/decoders
Error controllers
Branch Sales Offices:

AZ Tempe
AMD
1414 W Broadway
602-244-9511

CA Beverly Hills
AMD
9595 Wilshire Blvd
213-278-9700

CA Newport Beach
AMD
4000 MacArthur Blvd
714-752-6262

CA Woodland Hills
AMD
5955 DeSoto
213-992-4155

CA San Diego
AMD
9455 Ridgehaven
714-560-7030

CA Santa Clara
AMD
3350 Scott Blvd
408-727-1300

CO Denver
AMD
7000 Broadway
303-426-7100

FL Ft Lauderdale
AMD
100 NW 62nd St
305-771-6510

GA Atlanta
AMD
6755 Peachtree Industrial Blvd
404-449-7920

IL Schaumburg
AMD
1111 Plaza Dr
312-882-8660

MD Dorsey
AMD
7257 Parkway Dr
301-796-9310

MA Woburn
AMD
300 New Boston Pk
617-933-1234

MI Livonia
AMD
33150 Schoolcraft
313-425-3440

MN Edna
AMD
3400 W 66 St
612-929-5400

NJ Edison
AMD
2 Kilmer Rd
201-985-6800

NY Woodbury
AMD
40 Crossway Park Way
516-364-8020

NY Liverpool
AMD
290 Elwood Davis Rd
315-457-5400

NY Poughkeepsie
AMD
82 Washington St
914-471-8180

NC Charlotte
AMD
501 Archdale Dr
704-525-1875

OH Columbus
AMD
50 McNaughton Rd
614-864-9906

OR Tigard
AMD
5110 SW Fir Loop
503-620-1021

PA Horsham
AMD
1 Gibraltar Pl
215-441-8210

TX Dallas
AMD
6750 LBJ Fwy
214-934-9099

WA Bellevue
AMD
600 108th Ave NE
206-455-3600

ADVANCED SYSTEMS INC
2340 S Arlington Hts Rd
Arlington Heights, IL 60005
312-981-4260
Contact: Terry McMullen
■ Products & Services
Educational services
Branch Sales Offices:

AZ Tempe
Advanced Systems Inc
4659 South Lake Shore Dr
602-831-0963

CA Santa Monica
Advanced Systems Inc
2716 Ocean Park Blvd
213-450-1611

CA San Diego
Advanced Systems Inc
225 Broadway
714-232-6169

CA San Bruno
Advanced Systems Inc
1000 Cherry Ave
415-873-8040

CO Englewood
Advanced Systems Inc
5660 South Syracuse Circle
303-779-6747

CT Westport
Advanced Systems Inc
55 Post Rd West
203-227-1799

FL Miami
Advanced Systems Inc
1505 NW 167th St
305-621-7292

GA Atlanta
Advanced Systems Inc
1800 Water Pl
404-955-2732

IL Arlington Heights
Advanced Systems Inc
2340 South Arlington Heights Rd
312-981-4260

IL Elk Grove Village
Advanced Systems Inc
1601 Tonne Rd
312-593-1790

IL Chicago
Advanced Systems Inc
303 East Wacker Dr
312-856-1440

IN Indianapolis
Advanced Systems Inc
9101 Wesleyn Rd
317-875-5590

KS Fariway
Advanced Systems Inc
4210 Johnson Dr
913-262-3383

MA Wellesley
Advanced Systems Inc
40 William St
617-237-4802

MI Southfield
Advanced Systems Inc
17117 West Nine Mile Rd
313-552-1141

MN Minneapolis
Advanced Systems Inc
7851 Metro Pkwy Metro Office Park
612-854-2276

MO St Louis
Advanced Systems Inc
680 Craig Rd
314-569-0854

NE Omaha
Advanced Systems Inc
9140 West Dodge Rd
402-399-9065

NJ Somerset
Advanced Systems Inc
100 Davidson Ave
201-560-1610

NY New York City
Advanced Systems Inc
551 Fifth Ave
212-697-3110

NC Greensville
Advanced Systems Inc
Koger Executive Center 150 Executive Center Dr
803-297-4180

OH Cincinnati
Advanced Systems Inc
4050 Executive Park Dr
513-769-0815

OH Beachwood
Advanced Systems Inc
3690 Orange Pl
216-464-5810

PA Wayne
Advanced Systems Inc
The Woods—987 Old Eagle School Rd
215-687-3369

TN Nashville
Advanced Systems Inc
2500 Hillsboro Rd
615-292-3700

TX Dallas
Advanced Systems Inc
4099 McEwen St
214-233-0235

TX Houston
Advanced Systems Inc
4200 Westheimer St
713-965-0171

VA Arlington
Advanced Systems Inc
1901 North Fort Myer Dr
703-524-2277

WA Seattle
Advanced Systems Inc
The Fourth and Vine Building
206-447-9498

WI Milwaukee
Advanced Systems Inc
Mayfair Bank Tower 2300 North Mayfair Rd
414-771-7977

ALBERTA, CANADA
Calgary
Advanced Systems Inc
808 4th Ave
403-263-9460

ONTARIO, CANADA
Toronto
Advanced Systems Inc
40 University Ave
416-997-0762/416-593-3470

AGILE CORP
1050 Stewart Dr
Sunnyvale, CA 94086
408-735-9904
Contact: John Rademaker
■ Products & Services
Terminal controllers
Terminal interfaces
Computer/communications interfaces
Branch Sales Offices:
AL Birmingham
Midsouth Data Industries
2600 Creekview Dr
205-979-4300
CA Sunnyvale
Agile Corp
1050 Stewart Dr
408-735-9904
IL Chicago
Agile Corp
840 W Altgeld
312-929-3318
MA Needham
Information Technology
56 Kearney Rd
617-444-5702
MI Livonia
Alpha Computer
27503 School Craft
313-261-5830
MN Burnsville
Minnetek
12006 Riverwood Dr
612-894-3530
OK Oklahoma City
Oklahoma Systems
121 NW 23rd St
405-528-7851
VA Annandale
Terminals Unltd Inc
Box 1002
703-525-6309
ENGLAND
Maidenhead; Berks
Inter Sales Group
50/52 Moorbridge
628-36828

AIR LAND SYSTEMS CORP
2820 Dorr Ave
Fairfax, VA 22031
703-573-1100
Contact: William C Axe
■ Products & Services
Computer/communications interfaces
Protocol converters

ALANTHUS DATA COMMUNICATIONS CORP
6011 Executive Blvd
Rockville, MD 20852
301-770-1150
Contact: Arthur D Gallo
■ Products & Services
Concentrators
Multiplexers, statistical (intelligent)
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Cassette drives
Disk drives, floppy
Data entry terminals
Programmable terminals
Portable data entry terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Compton
Alanthus Data Comm Corp
2210 Gladwich St
213-537-6830
CA San Francisco
Alanthus Data Comm Corp
501 Forbes Blvd
415-952-6300
GA Casselberry
Alanthus Data Comm Corp
299 Live Oaks Blvd
305-834-2322
IL Bensenville
Alanthus Data Comm Corp
1054 N Tower Ln
312-860-2233
MA Waltham
Alanthus Data Comm Corp
393 Totten Pond Rd
617-890-0226
MI Troy
Alanthus Data Comm Corp
598 Oliver St
313-362-1686
MN Bloomington
Alanthus Data Comm Corp
7851 Metro Pkwy
612-854-1480
MO Creve Coeur
Alanthus Data Comm Corp
1842 Craig Rd
314-576-7955
NY New York
Alanthus Data Comm Corp
545 Madison Ave
212-688-2615
OH Cleveland
Alanthus Data Comm Corp
6929 W 130th St
216-888-3940
PA Pittsburgh
Alanthus Data Comm Corp
One Parkway Center
412-922-8483
TX Dallas
Alanthus Data Comm Corp
2636 Walnut Hill La
214-358-4151
TX Houston
Alanthus Data Comm Corp
4930-C Daconia St
713-683-7834
VA McLean
Alanthus Data Comm Corp
7926 Jones Branch Dr
301-770-1150

ALDEN ELECTRONIC & IMPULSE RECORDING EQUIPMENT CO INC
Washington St
Westboro, MA 01581
617-366-8851
Contact: Lawrence A Farrington
■ Products & Services
Acoustic couplers
Facsimile terminals
Graphic display terminals
Branch Sales Offices:
MA Brockton
Alden Intl
117 N Main St
617-583-0160
VA Alexandria
Alden Electronic Washington Lab & Service Facility
618 N Washington St
703-549-5199

ALGORITHMICS INC
177 Worcester Rd
Wellesley, MA 02181
617-237-7226
Contact: Brent Longtin
■ Products & Services
DDP systems
Local networks
Microcomputer/ microprocessor systems
Applications packages
Custom programs
Word processing packages

ALPHAMATRIX INC
1021 Millcreek Dr
Feasterville, PA 19047
215-355-3297
Contact: Robert Rand
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Minicomputers
Batch terminals
Remote job entry terminals
Applications packages
Code/protocol conversion programs
Custom programs
Operating systems
Protocol converters
Data communications consultants
Branch Sales Offices:
CA Long Beach
Alphamatrix Inc
200 W Willow
213-596-4388
OH Columbus
Gerhard & Associates
1384 Grandview Ave
614-488-9751

ALPHA WIRE CORPORATION
Box 711
Elizabeth, NJ 07207
201-925-8000
Contact: Paul Dietlin
■ Products & Services
Cables, electrical prefabricated extending

ALTOS COMPUTER SYSTEMS
2360 Bering Dr
San Jose, CA 95131
408-946-6700
Contact: Ronald Conway
■ Products & Services
Microcomputer/ microprocessor systems
Cartridge drives
Disk drives, floppy
Disk drives, large
Applications packages
DDP systems software
Operating systems
Word processing packages
Educational services
Maintenance organizations

AMCO ENGINEERING CO
3801 N Rose St
Schiller Pk, IL 60176
312-671-6670
Contact: Floyd Johnson

■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
AL Huntsville
Kemp Instruments
4306 Governors Dr W
205-837-4304
AZ Phoenix
Gramer & Company
Box 35336
602-995-9455
CA Los Angeles
The Knight Company
6733 S Sepulveda Blvd
213-670-2833
CA Orange County
The Knight Company
714-833-8250
CA San Diego
The Knight Company
10832 Worthing Ave
714-271-7817
CA Burlingame
Polach & Bensinger
1838 El Camino Real
415-697-2525
CO Boulder
R G Enterprises
1898 S Flatiron Ct
303-447-9211
CT Stratford
Instrument Dynamics
Marina Bldg
203-378-6019
FL Clearwater
WMM Associates
50 S Belcher
813-442-3913
FL Ft Lauderdale
WMM Associates
1021 NE 45th St
305-772-9850
FL Altamonte Springs
WMM Associates
475 Maitland Ave
305-831-4530
GA Atlanta
Kemp Instruments
5725 Buford Hiway NE
404-452-8050
IL Schiller Park
R L Lang & Associates
3801 N Rose St
312-671-3228
IN Ft Wayne
McDonald Sales Co
Box 9189
219-747-3650
IA Davenport
Ensco-Rep Inc
2615 W Central
319-386-6600
KS Overland Park
Ensco-Rep Inc
7939 Floyd
913-381-7557
LA Lafayette
Kemp Engineering
218 Rue Beauegard
318-269-9452
MD Silver Spring
L G White & Co
1751 Elton Rd
301-434-1555

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

MA Wakefield
Instrument Dynamics
Box 584
617-245-5100
MI Madison Heights
WKM Associates
345 Girard
313-588-2300
MN St Paul
Bonament Heyda Co
3830 Rustic Pl
612-484-8531
MO Maryland Heights
Ensco-Rep Inc
7 Millpark Dr
314-423-3935
NJ Mahwah
International Sales Div
Box 338
201-825-0473
NM Albuquerque
C T Carlberg Associates
Box 3177
505-265-1579
NY Glen Cove
F & F Associates
21 Brewster St
516-671-8900
NY North Syracuse
Naco Electronics
Box 276
315-699-2651
NC Winston Salem
L G White & Co
Box 2356
919-725-3612
OH Cleveland
WKM Associates
16141 Puritas Ave
216-267-0445
OH Dayton
WKM Associates
7913 S Suburban Rd
513-434-7500
OK Tulsa
Don Shuhart Company
2241 E Skelly Dr
918-747-4136
OR Portland
Barrett/Squibb & Assoc
14273 NW Science Park Dr
503-644-2550
PA Broomall
White/Whiddett Co
630 Parkway
215-353-6347
PA Pittsburg
WKM Associates
90 Clairton Blvd
412-892-2953
SC Greenville
L G White & Co
Box 5531 Station B
803-271-0630
TX Dallas
Don Shuhart Company
12011 Coit Rd
214-239-0185
TX El Paso
C T Carlberg & Assoc
Box 4752
915-824-4492
TX Houston
Kemp Engineering Co
4540 West 34th St
713-688-1431
VA Richmond
L G White & Co
Box 29081
804-740-7093

WA Redmond
Barrett/Squibb & Assoc
17090 Avondale Way NE
206-885-6991

AMERICAN COMPUTER GROUP INC
Box 68 Kenmore Sta
Boston, MA 02215
617-437-1100
Contact: Sales Department
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Batch terminals
Programmable terminals
Teletypewriters
Video data terminals (KSR)
Lease and resale organizations

AMERICAN FIBER OPTIC CORP
1196 E Willow St
Signal Hill, CA 90806
213-595-8797
Contact: Pieter M de Bruijn
■ Products & Services
Cables, lightwave (optical fiber)

AMERICAN LASER SYSTEMS INC
106 James Fowler Rd; Santa Barbara Airport
Goleta, CA 93017
805-967-0423
Contact: Jackie Parker
■ Products & Services
Infrared systems
Computer/communications interfaces
Branch Sales Offices:
AZ Phoenix
Industrial Video
11805 N 29th Pl
602-971-6626
CA San Diego
DRF Assoc Inc
3408 Mt Ariane
714-292-9431
CA Martinez
SLK
889 Howe Rd
CO Bailey
Scientific Systems, Inc
43 Main St
206-821-1055
NH Londonderry
Associated Systems
Box 333
603-434-0731
NJ Pitman
Cogan Sales
133 Magnolia Ave
609-589-7455
TN Tullahama
Lester Vihon Associates
Route 3, Box 108A
625-455-5767
TX Houston
Carey & Associates
14142 Ashton St
713-460-1111

AMERICAN MICROSYSTEMS INC
3800 Homestead Rd.
Santa Clara, CA 95051
408-246-0330
Contact: Nancy Hartsoch
■ Products & Services
Microcomputer/ microprocessor systems
Terminal controllers
Terminal interfaces
Automatic calling units
Data security devices: encoder/decoders

Voice digitizers
Branch Sales Offices:
CA Newport Beach
AMI Field Sales
1451 Quail St
IL Elk Grove Village
AMI Field Sales
500 Higgins Rd
312-437-6496
NY Monsey
AMI Field Sales
20F Robert Pitt Dr
914-352-5333

AMERICAN MULTIPLEX SYSTEMS
1148 E Elm Ave
Fullerton, CA 92631
714-870-5821
Contact: Robert D Schull
■ Products & Services
Multiplexers, time division
Applications packages
Computer/communications interfaces
Data security devices: software security modules

AMERICAN NATIONAL SUPPLY
PO Box 2259
Gardena, CA 90247
800-421-1270
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Cartridges
Cassettes
Disk packs
Tape, magnetic
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers

AMERICAN SATELLITE COMPANY
1801 Research Blvd
Rockville, MD 20850
301-251-8333
Contact: Bruce McClelland
■ Products & Services
Facsimile-service carriers
Message (including telegraph) carriers
Satellite carriers
Specialized carriers
Digital service units
Digitized-voice processors
Earth stations
Network management centers
DDP systems
Teleconferencing networks
Programmable terminals
Computer/communications interfaces
Data security devices: encoder/decoders
Data security devices: software security modules
Satellite delay compensation units
Branch Sales Offices:
CA Los Angeles
Marketing Office
9800 S Sepulveda
213-641-7570
CA San Francisco
Marketing Office
1750 Montgomery St
415-986-1288
IL Chicago
Marketing Office
625 N Michigan Ave
312-266-1766
NY New York
Marketing Office
114 Liberty St
212-775-1234
TX Houston
Marketing Office
530 North Belt E
713-445-5865
TX Dallas
Marketing Office
5501 LBJ Freeway
214-239-2123

AMERICAN TELECOM
3190 Mira Loma Ave
Anaheim, CA 92806
714-630-7721
Contact: Jim Moise
■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX, EPBX, etc.)
Branch Sales Offices:
CA Palos Verdes Pn
American Telecom
29129 Forthridge Rd
213-541-3878
CA Gardena
American Telecom
14030 Ainsworth St
213-770-6547
CA Irvine
American Telecom
4992 Barkwood Ave
714-857-2025
GA Marietta
American Telecom
2860 Alberta Dr
404-977-1174
IL North Aurora
American Telecom
108 Laurel Dr
312-544-1048
OH Breckville
American Telecom
10139 Hickory Rd
216-526-2025
BRITISH COLUMBIA, CANADA
Langley
American Telecom
3753 196A St
604-530-4297

AMERICAN TERMINAL LEASING CO
712 Beacon St
Boston, MA 02215
617-437-1100
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Batch terminals
Programmable terminals
Teletypewriters
Video data terminals (KSR)
Lease and resale organizations

AMES COLORFILE CORP
DIV AMES SAFETY ENVELOPE COMPANY
12 Park St
Somerville, MA 02143
617-776-3360
■ Products & Services
Multiplexers, group band
Bar code readers
Remote job entry terminals

AM JACQUARD SYSTEMS
3340 Ocean Pk Blvd
Santa Monica, CA 90405
213-450-1242
Contact: Don Novak
■ Products & Services
Front-end processors
DDP systems
Minicomputers
Cartridges
Disk drives, floppy
Disks, floppy
Disk drives, large
Electronic mailboxes
Tape drives, magnetic
Batch terminals
Programmable terminals
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Word processors, communicating
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Educational services
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
CO Englewood
AM Jacquard Systems
7300-C S Alton Wy
303-773-2909
GA Atlanta
AM Jacquard Systems
1835 Savoy Dr NE
404-455-0155
IL Rolling Meadows
AM Jacquard Systems
1911 Rohling Rd
MO St Louis
AM Jacquard Systems
5240 Oakland Ave
314-534-5017
NJ Florham Park
AM International
201-966-1136

AM MICROGRAPHICS
2871 Walnut Ave
Tustin, CA 92680
714-544-9800
Contact: Julie Merritt
■ Products & Services
Microfilm equipment, systems and services
Branch Sales Offices:
CA Burbank
AM Micrographics
1721 W Verdugo Ave
213-841-8190
CO Lakewood
AM Micrographics
1428 S Wadsworth Blvd
303-988-6596
CT Enfield
AM Micrographics
545-547 Hazard Ave
203-525-7830
FL Orlando
AM Micrographics
1320 N Semoran Blvd
305-282-5070
GA Atlanta
AM Micrographics
3660 Interstate 85
404-451-1026
IL Schaumburg
AM Micrographics
1171 Tower Rd
312-882-4790

KS Lenexa
AM Micrographics
8245 Nieman Rd
913-492-4612
MD Landover Hills
AM Micrographics
6200 Annapolis Rd
301-773-6166
MA S Borough
AM Micrographics
245 Turnpike Rd
617-485-6886
MO Crestwood
AM Micrographics
9109 Watson Rd
314-962-2001
NE Omaha
AM Micrographics
6910 Pacific AAve
402-558-3990
NY NY
AM Micrographics
39 Broadway
OH Columbus
AM Micrographics
6663 Huntley Rd
614-436-9300
PA Wayne
AM Micrographics
999 Old Eagle School Rd
TX Carrollton
AM Micrographics
2081 Hutton Rd
WA Bellevue
AM Micrographics
13555 Bellevue-Redman Rd
206-643-6600
ONTARIO, CANADA
Toronto
AM Micrographics
165 Milner Ave
416-298-2700

For further catalog information, turn to **UpDate Service Card, page 201.**

AMPEX CORP
MEMORY PRODUCTS DIV
200 N Nash St
El Segundo, CA 90245
213-640-0150
Contact: John Jory
■ Products & Services
Add-on main memory
Cartridge drives
Disk drives, floppy
Disk drives, large
Programmable terminals
Interactive terminals
Point of sale terminals
Terminal controllers
Terminal interfaces
Branch Sales Offices:
CA Santa Ana
Ampex
1570 E 17
714-973-2970
CA Sunnyvale
Ampex
814 San Aleso Rd
408-253-6020
FL Pompano Beach
Ampex
1620 S Federal Hwy
305-785-6400
GA Atlanta
Ampex
3135 Chestnut Dr
404-451-7112
IL Arlington Heights
Ampex
719 W Algonquin Rd
312-593-6000
MD Bethesda
Ampex
10215 Fernwood Rd
301-530-8800
MA Waltham
Ampex
391 Totten Pond Rd
617-890-2040
NJ Hackensack
Ampex
75 Commerce Way
201-489-7400
TX Houston
Ampex
6430 Hillcroft
713-774-8714
TX Dallas
Ampex
1615 Prudential Dr
214-637-5100
060
Boulder
Ampex
183 Cedar Brook Rd
303-443-6885

AMTEK BUSINESS MACHINES, INC
2255 H Martin Ave
Santa Clara, CA 95050
408-727-1510
Contact: Ron Johnson
■ Products & Services
Modems, multipoint
Bar code readers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)

ANACONDA-ERICSSON
INFORMATION SYSTEMS
100 Crossways Park West
Woodbury, NY 11797
516-364-1111
■ Products & Services
Lightwave (fiber optic) systems
Microwave/laser systems
Modems, voice-grade, low-speed
(0-1,200 b/s)
Modems, voice-grade, medium speed
(1,800-3,600 b/s)

ANADEX INC
9825 DeSoto Ave
Chatsworth, CA 91311
213-998-8010
Contact: K A Mathews
■ Products & Services
Remote line printers
Teleprinters, impact
Branch Sales Offices:
CA San Jose
Anadex Inc
4010 Moorpark
408-247-3933
CA Irvine
Anadex Inc
17744 Skypark Blvd
714-557-0457
MA Wakefield
Anadex Inc
591 North Ave
617-245-9160
TX Austin
Anadex Inc
804 Timberline Office Pk
512-327-5250

ANALOG DEVICES
Route 1 Industrial Pk
Norwood, MA 02062
617-329-4700
Contact: Keith Rutherford
■ Products & Services
Tape drives, magnetic
Power supplies
Branch Sales Offices:
AL Huntsville
Currie Peak & Frazier
205-536-1506
AZ Tempe
Piper Sales Company
602-949-0048
CA Huntington Beach
Analog Devices Inc
7271 Mars Dr
714-842-1717
CA Huntington Beach
Analog Devices Inc
714-842-1717
CA San Jose
Analog Devices Inc
408-947-0633
CO Boulder
Grady Moore Associates
303-494-3351
FL Orlando
Currie Peak & Frazier
305-855-0843
GA Duluth
Currie Peak & Frazier
404-476-3107
IL Glendale Hgts
Analog Devices Inc
1793 Bloomingdale Rd
312-653-5000
IL Northfield
Torkelson Associates
312-446-9085
IN Indianapolis
Torkelson Associates
317-244-7867
KS Shawnee Mission
Technical Sales
913-888-3330
MD Columbia
Rep-Tron Inc
301-982-1580
MA Norwood
Analog Devices Inc
Box 280
617-329-4700
MI Detroit
Rathsburg Associates Inc
313-882-1717
MN Minneapolis
Torkelson Associates
612-835-2414
MO St Louis
Technical Sales
314-725-5361
NJ Maplewood
Harwood-Sandler Associates
516-673-1900
NM Albuquerque
Grady Moore Associates
505-262-1416
NY Hamburg
Labtronics Inc
716-648-0107
NY Huntington
Harwood-Sandler Associates
516-673-1900

NY Kirkwood
Labtronics Inc
607-775-3739
NY Mount Kisco
Harwood-Sandler Associates
516-673-1900
NY North Tonawanda
Labtronics Inc
716-693-2257
NY Syracuse
Labtronics Inc
315-454-9314
NY Utica
Labtronics Inc
315-735-2153
NC Greensboro
Currie Peak & Frazier
919-273-3040
OH Cleveland
Electro Sales Associates
216-261-5440
OH Dayton
Electro Sales Associates
513-426-5551
OH Dublin
Analog Devices Inc
614-764-8795
PA Alison Park
Electro Sales Associates
412-487-3801
PA Ft Washington
Analog Devices Inc
215-643-7790
SC Columbia
Currie Peak & Frazier
803-254-1971
TX Richardson
Analog Devices Inc
777 S Central Expwy
214-231-5094
TX Houston
Analog Devices Inc
713-664-6704
TX Richardson
Analog Devices Inc
214-231-5094
UT Salt Lake City
Grady Moore Associates
801-359-3504
WA Seattle
Avionics Liaison
206-767-3870
WI Brookfield
Torkelson Associates
414-784-7736

Stay up-to-date with new catalog information and new product announcements.
Turn to **UpDate Service Card, page 201.**

ANALYTICAL CHEM LABS
1960 E Devon Ave
Elk Grove Village, IL 60007
312-981-9212
■ Products & Services
Electrical-parameters test equipment
Ribbons and supplies for terminals and printers
Branch Sales Offices:
CA San Jose
Sharon Kaminskas
408-259-5043

ANCHOR PAD INTERNATIONAL
3224 Thatcher
Marina del Rey, CA 90291
213-559-7111
Contact: Bill Brock
Branch Sales Offices:
CA San Francisco
Anchor Pad of Northern California
1255 Post St
415-441-2593
MD Silver Spring
Anchor Pad Security Services
8121 Georgia Ave
301-587-7600
TX Dallas
Anchor Pad of Texas
3001 LBJ Frwy
214-620-7170

ANDERSON JACOBSON, INC
521 Charcot Ave
San Jose, CA 95131
408-263-8520
Contact: Tom Zmach
■ Products & Services
Branch exchanges—private (PBX, PABX, etc.)
Message switchers
Acoustic couplers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Local networks
Teleconferencing networks
Add-on auxilliary memory
Disk drives, floppy
Disks, floppy
Electronic mailboxes
Floppy disk recorders
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Word processors, communicating
Automatic answering units
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
AL Homewood
Anderson Jacobson
232 Oxmoor Cir
205-942-2625
CA San Jose
Anderson Jacobson
2065 Junction Ave
408-946-2900
CA Carson
Anderson Jacobson
221 Selandia La
213-538-4170
CA San Diego
Anderson Jacobson
3435 Camino Del Rio S
714-233-7050
CA San Francisco
Anderson Jacobson
185 Berry St
415-495-4633
CO Aurora
Anderson Jacobson
5 Parker Place
303-750-4224
CT E Hartford
Anderson Jacobson Inc
135 Burnside Ave
203-289-9591
GA Norcross
Anderson Jacobson
6689 Peachtree Indst Blvd
404-448-1520
IL Rosemont
Anderson Jacobson
5515 Milton Pkwy
312-671-7155
IN Indianapolis
Anderson Jacobson
2070 E 54th St
317-253-0246
IN Jeffersonville
Anderson Jacobson
1028 Watt St
812-283-6706
MI Oak Park
Anderson Jacobson
14630 W Eight Mile Rd
313-967-1414
MN Spring Lake
Anderson Jacobson
1633 Highway 10 NE
612-784-5045
MO Kansas City
Anderson Jacobson
3600 Broadway
816-531-2906
NJ Hackensack
Anderson Jacobson
80 Frederick St
201-488-2525
NY New York
Anderson Jacobson
1 Pennsylvania Plaza; Suite 2430
212-594-9630
OH Cincinnati
Anderson Jacobson
10810 Millington Ct
513-793-6900
OH Akron
Anderson Jacobson
871 Moe Dr
216-633-0203
OH Columbus
Anderson Jacobson
4555-8 Groves Rd
614-868-0333
OH Middleburg Hts
Anderson Jacobson
6908 Engle Rd
216-234-3450
OH Dayton
Anderson Jacobson
Box #5
513-229-5055
PA Sharpsburgh
Anderson Jacobson
1045 N Canal St
412-781-1167
PA Norristown
Anderson Jacobson
720 E Johnson Hwy
215-277-7074
TX Dallas
Anderson Jacobson
1625 Mockingburd Ln
214-631-3594
TX Houston
Anderson Jacobson
2400 Central Parkway
713-771-1342
WA Tukwila
Anderson Jacobson
944 Industry Dr
206-575-8024

WI West Allis
Anderson Jacobson
6104 W Lincoln Ave
414-327-2370
ONTARIO, CANADA
Ottawa
Anderson Jacobson
50 Colonnade Rd
613-226-2551
ONTARIO, CANADA
Markham ON
Anderson Jacobson
321 Don Park Rd
416-495-5510
ENGLAND
Berkshire Slough
Anderson Jacobson
752 Deal Ave Slough
25172
FRANCE
Paris
Anderson Jacobson, S A
14 rue Leon Gambetta; 92120
Montrouge
654-1000
GERMANY, WEST
IM Luchsfed 5
Anderson Jacobson
02204-53051/2

ANN ARBOR TERMINALS
6175 Jackson Rd
Ann Arbor, MI 48103
313-663-8000
Contact: Sarah J Freeman
■ Products & Services
Batch terminals
Data entry terminals
Graphic display terminals
Interactive terminals
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:
CA Canoga Park
Chandler Assoc
7032 Owensmouth Ave
213-340-6103
CA Los Altos
Chandler Assoc
One First St
408-738-2370
CA Los Angeles
David Jamison Carlyle
Two Century Pl
213-277-4562
CA Oakland
David Jamison Carlyle
127 Second St
415-835-9820
CA Newport Beach
David Jamison Carlyle
2709 Hillside Dr
714-640-0355
CO Denver
Chidco Microsystems
1736 East Evans
303-722-2887
CT Litchfield
Digital Sales Assoc
West St
203-567-9776
GA Woodstock
Eds Computer Systems
Dixie Industrial Park, Highway
92 W
404-928-0240
HI Honolulu
David Jamison Carlyle
677 Ala Moana Blvd
808-531-5136
IL Elmhurst
Sector Engineering Sales
770 N Church Rd
312-530-7850
IL Chicago
David Jamison Carlyle
4200 Marine Dr
312-975-1500
IN Indianapolis
Sector Engineering Sales
8463 Castlewood Dr
317-842-1120
MD Rockville
Electronic Marketing Assoc
11716 Parklawn Dr
301-744-7700
MA Waltham
Digital Sales Assoc
9 Spring St
617-899-4300
MI Troy
Kimble Computer Systems
246 West Maple Rd
313-362-4884
MN Hamel
Sector Engineering Sales
6200 Rolling Hills Rd
612-478-6675
MO Grandview
Digital Sys Sls
4006 East 137th Ter
816-765-3337
NJ Matawan
David Jamison Carlyle Corp
55 D Route 34
201-946-9669
NY Great Neck
Harvey J Krasner Associates
87 Water Mill La
516-487-0690
NC Winston-Salem
Radco Company
614 First Union Bldg
919-722-9671
PA Plymouth Meeting
Electronic Marketing Assoc
649 W Germantown Pike
215-828-7400
RI Portland
Hood Engineering
9985 NW Ash
503-244-0760
WA Bellevue
Hood Eng
12835 Bellevue-Redmond
206-453-9375
WI Milwaukee
Sector Engineering Sales
8705 Pt Washington Rd
414-352-8280
BRITISH COLUMBIA, CANADA
W Vancouver
Tracan Electronics Western Ltd
1144 Millstream Rd
604-926-3411

ANTENNA FOR COMMUNICATIONS
486 Cypress Rd
Ocala, FL 32672-3198
904-687-4121
Contact: Kevin McWhinney
■ Products & Services
Earth stations
Microwave/laser systems
Branch Sales Offices:
QUEBEC, CANADA
Montreal
Mitec Electronics
896 Montee de Liesse
514-334-9140

APOLLO COMPUTER INC
19 Alpha Rd
Chelmsford, MA 01824
617-256-6600
Contact: James Geisman
Branch Sales Offices:
CA Mountain View
Apollo Computer
2067 Landings Dr
415-467-3231
MN Edina
Apollo Computer
7600 France Ave S
612-835-4541
PA Wayne
Apollo Computer
985 Old Eagle School Rd;Suite
517
215-964-8510
TX Dallas
Apollo Computer
4220 Proton Rd
214-239-8528
ENGLAND
Berkhamstead, Herts
Apollo Computer V.K. Ltd
Bulborne Moose Gossoms End
04-427-75026

APPLE COMPUTERS
10260 Bandley Dr
Cupertino, CA 95014
408-996-1010
Contact: Greg Warwick
■ Products & Services
Microcomputer/ microprocessor systems
Disk drives, floppy
Word processors, communicating
Emulation packages
Word processing packages

APPLIED DATA COMMUNICATIONS
14272 Chambers Rd
Tustin, CA 92680
714-731-9000
Contact: John Slumpff
■ Products & Services
EIA cable testers
Protocol analyzers
Disk drives, floppy
Computer/communications interfaces
Branch Sales Offices:
CA Tustin
ADC
14272 Chambers Rd
714-731-9000
MA Burlington
ADC
50 Mall Rd
617-273-4844
TX Dallas
ADC
2540 Walnut Hill
214-352-4012

APPLIED DATA RESEARCH
Rt 206 Center
Princeton, NJ 08540
201-874-9000

APPLIED DELTA SYSTEMS INC
101 Kor Center E
Bellmawr, NJ 08031
609-931-3100
Contact: H Kendall Felix
■ Products & Services
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Acoustic couplers

Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
MIL 188C adapters
Protocol analyzers
Response-time monitors
Network management centers
Technical control centers
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Voice adapters
Branch Sales Offices:
PA Pittsburgh
Applied Delta Systems
16 E West Dr
412-931-1960

APPLIED DIGITAL DATA SYSTEMS INC
100 Marcus Blvd
Hauppauge, NY 11788
516-231-5400
Contact: David Zeiter
■ Products & Services
Microcomputer/ microprocessor systems
Batch terminals
Programmable terminals
Interactive terminals
Video data terminals (RO)
Branch Sales Offices:
AZ Phoenix
Applied Digital Data Systems Inc
2544 E University Dr
602-966-3799
CA Tustin
Applied Digital Data Systems Inc
2680 Walnut Ave
714-730-6700
CA Palo Alto
Applied Digital Data Systems Inc
2275 East Bayshore Rd
415-856-0560
CO Aurora
Applied Digital Data Systems Inc
2323 S Troy St
303-756-3663
GA Atlanta
Applied Digital Data Systems Inc
3805 NE Expwy
404-455-9341
IL Schaumburg
Applied Digital Data Systems Inc
1325 Remington Rd
312-843-7555
MA Westboro
Applied Digital Data Systems Inc
18 Lyman St
617-366-1909
MI Southfield
Applied Digital Data Systems Inc
21800 W 10 Mile Rd
313-358-0950
MO St Louis
Applied Digital Data Systems Inc
7063 Broken Oak Dr
314-846-5960
NJ Sea Bright
Applied Digital Data Systems Inc
16 Village Rd
201-747-2337
NY Hauppauge
Applied Digital Data Systems Inc
100 Marcus Blvd
516-231-5400
OH Cincinnati
Applied Digital Data Systems Inc
4 Arcadia Pl
513-321-6440
TX Dallas
Applied Digital Data Systems Inc
13610 Midway Rd
214-387-2337
UT Draper
Applied Digital Data Systems Inc
12953 S State St
801-571-3980
WA Kent
Applied Digital Data Systems Inc
19613 81 Ave S
206-872-7104
ENGLAND
New Malden, Surrey
Applied Digital Data Systems Inc
137-141 High St
01-949-1272

If you know the name of the product and want to know who makes it, turn to **Products & Services Directory, page 7.**

APPLIED DYNAMICS INTERNATIONAL
3800 Stone School Rd
Ann Arbor, MI 48104
313-973-1300
Contact: D W Chandler
■ Products & Services
Local network interfaces
Microcomputer/ microprocessor systems
Data entry terminals
Graphic display terminals

APPLIED SYSTEMS CORP
26401 Harper Ave
St Claire Shores, MI 48081
313-779-8700
Contact: Marty Wyrod
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, statistical (intelligent)
DDP systems
Minicomputers
Add-on main memory
Cartridge drives
Disk drives, floppy
Tape drives, magnetic
Batch terminals
Graphic display terminals
Programmable terminals
Portable data entry terminals
Remote line printers
Teleprinters, impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Code converters
Computer/communications interfaces
Data compression devices
Data security devices: encoder/decoders
Protocol converters
Data communications consultants
Branch Sales Offices:
CA Encino
King Engr Co
17333 Rancho St
213-981-8677
OH Cleveland
CSA Sales Co
20278 Westhaven
216-333-2088

ARDENT COMPUTER PRODUCTS
145 Palisales St
Dobbs Ferry, NY 10522
914-693-6900
Contact: Arthur R Garofalo
■ Products & Services
Multiplexers, statistical (intelligent)
DDP systems
Microcomputer/ microprocessor systems
Minicomputers
Maintenance organizations
Branch Sales Offices:
CA Anaheim
Ardent Computer
2259 Via Burton
714-870-7660
SWITZERLAND
Wangen
Ardent S A
Im Hatzelwein
411-833-4756

THE ARIES GROUP
1395 Piccard Dr, Suite 380
Rockville, MD 20850
301-963-7555
Contact: Edward T Garner
■ Products & Services
Applications packages
Custom programs

ARK ELECTRONIC PRODUCTS
325 W Hibiscus Blvd
Melbourne, FL 32901
305-724-5260
Advertising page 60
Contact: P W Schirmer
■ Products & Services
Modem sharing units
Multiplexers, frequency division
Modems, limited distance
Modem eliminators
Computer/communications interfaces
Protocol converters

ARTELONICS CORP, AFFILIATE OF SHELL CANADA LTD
2952 Bunker Hill Ln
Santa Clara, CA 95050
408-727-3071
Contact: Gordon Kraft
■ Products & Services
Remote network processors
DDP systems
Local networks
Programmable terminals
Branch Sales Offices:
CA Newport Beach
Artelonics Corporation
4121 Westerly Pl
CA Foster City
Boles and Company
1169 Chess Dr
CA San Mateo
Bradford Technical Associates
307 South "B" St
CA Mt View
Intectra
2629 Terminal Blvd
MD Landover
Data Systems Mktg Corp
8401 Corporate Dr
MI Southfield
Binary, Inc
27224 Southfield Rd
NY Hauppauge
Artelonics Corporation
330 Vanderbilt Motor Pkwy
NY White Plains
Bartlett Associates
470 Mamaroneck Ave
TX El Paso
DBM Associates
419 Balboa Rd

ARTS COMPUTER PRODUCTS INC
80 Boylston St, Suite 1260
Boston, MA 02116
617-482-8248
Contact: Alane Gertner
■ Products & Services
Audio response units
Video data terminals (KSR)
Custom programs

ASI TELEPROCESSING
101 Morse St
Watertown, MA 02172
617-923-1850
Contact: Karen Smith
■ Products & Services
Front-end processors
Packet processors
Remote network processors
Audio response units
Branch Sales Offices:
GA Marietta
ASI Teleprocessing
3566 Liberty Ridge Trail
404-977-7707
MA Watertown
ASI Teleprocessing
101 Morse St
617-923-1850
NY New York
ASI Teleprocessing
18 E 14st St
212-532-2344

ASPEN RIBBONS INC
1700 N 55th St
Boulder, CO 80301
303-444-4054
Contact: Peter C Williams
■ Products & Services
Ribbons and supplies for terminals and printers

ASSOCIATED COMPUTER CONSULTANTS
228 E Cota St
Santa Barbara, CA 93101
805-963-8801
Advertising page 97
Contact: Sheldon L Hess
■ Products & Services
Front-end processors
Packet processors
Remote network processors
Local networks
Computer/communications interfaces
Protocol converters
Data communications consultants
Branch Sales Offices:
CA Woodland Hills
Gordon Osborne & Assoc
23040 Cumorah Crest Dr
213-888-9916
CA Aptos
Brian McGann
210 Highland Dr
408-425-0937
MD Columbia
Ron Stoughton
K&M Lakefront North
301-997-9373
DENMARK
2610 Rodovre
Datalog A/S
Roskildevej 398
01-41-51-33
ENGLAND
Milton Keynes
Scicon Computer Services
Brick Close, Kiln Farm
0908-565656

REPUBLIC OF CHINA
Taipei
Multitech International
977 Min Shen E Rd
02-7691225

ASSOCIATED DATA PROCESSING SERVICE ORGANIZATION
1300 N 17th St
Arlington, VA 22209
703-522-5055
Contact: Catherine Colverd

ASTROCOM CORP
120 W Plato Blvd
St Paul, MN 55107
612-227-8651
Advertising page 5
Contact: Thomas H Frahm
■ Products & Services
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multipoint
Modem eliminators
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Data access arrangement devices
Branch Sales Offices:
AZ Tempe
Qualtech Inc
610 W Broadway
602-967-4655
CA N Hollywood
O'Halloran Assoc
10700 Ventura Blvd
213-877-0173
CA Palo Alto
O'Halloran Assoc
1020 Corporation Way
415-326-1493
CO Denver
Data Systems Mktg
955 Bannock
303-573-5133
CO Colorado Springs
Data Systems Marketing
1120 N Circle Dr
303-594-0880
CT Southbury
J J Wild Inc
Box 342
203-264-9494
FL Orlando
Technical Assoc
Box 20693
305-277-4980
IL Bloomingdale
Scientific Devices
255 E Lake St
312-894-5470
IN Indianapolis
Carter, McCormic & Peirce Inc
1717 E 116th St
317-844-4175
MA Needham
J J Wild Inc
163 Reservoir St
617-444-2366
MA Merrimack
J J Wild Inc
Box 574
603-424-4717
MI Farmington Hills
Carter, McCormic & Peirce Inc
23995 Freeway Park Dr
313-477-7700
MI Farmington Hills
Lowell Wendt Marketing Co
27650 Farmington Rd
313-553-9800
MN Eden Prairie
Scientific Devices
7032 Willow Creek Rd
612-944-3515
NJ Ridgewood
Hansen & Hughes Co
Box 806
201-652-7055
NM Albuquerque
Qualtech Inc
130 Louisiana NE
505-255-6100
OH Cleveland
Carter, McCormic & Peirce Inc
22650 Lorain Rd
216-779-5100
OH Englewood
Carter, McCormic & Peirce Inc
15 Rockridge Rd
513-836-0951
PA King of Prussia
J E Cuesta & Co
Dekalb Pk
215-265-5800
PA Pittsburgh
Carter, McCormic & Peirce Inc
409 Beatty Rd
412-372-4415
TN Memphis
Insight Sales & Distr
3093 Stone Brook Crcl
901-345-0145
TX Houston
Data Aids Assoc
1440 North Loop
713-862-6685
TX Dallas
Data Aids Assoc
2880 LBJ Frwy
214-620-1551
ONTARIO, CANADA
Ottawa
Louis Albert Assoc Inc
2264 Stevenage Dr
613-737-5941
AUSTRALIA
Crows Nest NSW
Datamatic
90 Alexander St
43-3333
ENGLAND
Princes Risborough; Bucks
Data & Control Equipment LTD
Poppy Rd
08-444-3281
GERMANY, WEST
Bismarckstrasse 8
Telemation GMBH & Co
Bad Soden/TS
06196-27054
NORTHERN IRELAND
Dublin
Bootstrap Ltd
9 Georges Ave
353-1-887892

AT&T
225 Littleton Rd; Room 2F07
Morris Plains, NJ 07950
201-631-1176
Contact: Local Bell Telephone Operating Co
■ Products & Services
Telephone companies
Digital service units
Modems, limited distance
Modems, multipoint

Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Disk drives, floppy
Disks, floppy
Batch terminals
Data entry terminals
Interactive terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Automatic calling units
Data jacks and plugs

Branch Sales Offices:

AL Birmingham
South Central Bell
CA San Francisco
Pacific Telephone
CO Denver
Mountain Bell
CT New Haven
Southern New England
DC Washington
C & P Telephone
GA Atlanta
Southern Bell
IL Chicago
Illinois Bell
IN Indianapolis
Indiana Bell
MA Boston
New England Tel
MS Detroit
Michigan Bell
MO St. Louis
Southwestern Bell
NE Omaha
Northwestern Bell
NJ Bedminster
Atet-Long Lines
NJ Newark
New Jersey Bell
NY New York City
New York Tel
OH Cincinnati
Cincinnati Bell
OH Cleveland
Ohio Bell
PA Philadelphia
Bell of Pennsylvania
WA Seattle
Pacific Northwest Bell
WI Milwaukee
Wisconsin Bell

ATLANTIC RESEARCH CORP
5390 Cherokee Ave
Alexandria, VA 22314
703-642-4000
Advertising page 79
Contact: D Ebert
■ Products & Services
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Error rate detectors
Response-time monitors
RTS emulator
Network management centers
Technical control centers
Data jacks and plugs
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Educational services

Branch Sales Offices:

AZ Tempe
Qualtech
610 W Broadway
602-967-4655
CA Hollywood
O'Halloran Assoc
10700 Ventura Blvd
213-877-0173
CA Palo Alto
O'Halloran Assoc
1020 Corporation Way
415-326-1493
CO Denver
Data Systems Marketing
955 Bannock St
303-573-5133
CO Colorado Springs
Data Systems Marketing
1120 N Circle Dr
303-599-4581
FL Boca Raton
Network Orange
608 Bridgewood Dr
305-392-7487
GA Norcross
Technology Marketing Inc
6419 Danbury Ln
404-447-6366
HI Kailua
Gray Associates
1269 Maleko St
808-261-3751
IL Arlington Hgts
Reshal Assoc Inc
219 W Univ Dr
312-398-7660
KY Louisville
Data Processing Sciences Corp
3715 Bardstown Rd
502-587-6211
MD Edgewater
Commart Inc
600 Central Ave
301-261-4344
MA Fairhaven
Data Brain Inc
Box 161
617-994-3944
MI Brighton
Reshal Assoc Inc
6913 Wide Valley Dr
313-231-2001
MN Eden Prarie
Reshal Assoc
10521 Lake Fall Dr
612-941-8697
MO Independence
Eng Services Co
2425 S Crysler
816-254-3600
MO St Louis
Eng Services Co
8420 Delmar Blvd
314-997-1515
NJ Ridgewood
Instrumentation Sales Co
171 E Ridgewood Ave
201-445-5210
NJ Palisades Park
Data Net Inc
120 W Palisades Blvd
201-592-6750
NM Albuquerque
Qualtech
130 Louisiana NE
505-255-6100
NY Selkirk
R Modine Associates
6 Sherbrook Dr
518-439-6092
OH Cincinnati
Data Processing Corp
2327 Park Ave
513-961-0776
OH Cleveland
Data Processing Sciences Corp
17534 Royalton Rd
216-572-1122
OH Dayton
Data Processing Sciences Corp
3300 South Dixie Ave
513-294-2770
OH Toledo
Data Processing Sciences Corp
3126 Sylvania Ave
419-472-0111
OK Tulsa
Barry Sales Inc
3035 East Skelly Dr
918-749-7775
OR Lake Oswego
Showalter Instruments Inc
50 Kerr Pkwy
503-224-8487
TX Richardson
Barry Sales Inc
709 Lingco Dr
214-234-0255
TX Houston
Barry Sales Inc
6400 Westpark
713-784-5860
TX El Paso
Qualtech
Box 26125
915-592-2415
UT Salt Lake City
Data Systems Marketing
940 North 400 E
801-292-6666
WA Bellevue
REP-SAC Corporation
10655 NE 4th
206-451-8600
WA Bellevue
Showalter Instruments Inc
1521 130th NE
206-455-4922
WA Richland
Showalter Instruments Inc
1321 Kimball Ave
509-943-5288

ONTARIO, CANADA
Ottawa
Louis Albert Assoc Inc
2264 Stevenage Dr
613-737-5941

AUSTRALIA
Artarmon
Datamatic Pty Ltd
60/64 Dickson Ave
438-2699

AUSTRIA
Vienna
Gebrueder Schoeller
Industriegasse 7
0222-84 26-31

BELGIUM
Brussels
Simac Elect
Rue Du Progres, 52-Boite 3
02-219.24.51

ENGLAND
Reading, Berkshire
Interlekt Rathbart Ltd
Reacis House, Portman Road
734-59-6226

FINLAND
Helsinki
ATK-TARVIKE OY
Kutojantie 8, 02630 Espoo 63
90-179541

FRANCE
Paris
Interdata
91943 Les Ulis
06-928-0131

GERMANY, WEST
Frankfurt
Telemation GmbH
Bismarckstrasse 8
06196-27054

GREECE
Athens
Digitel Ltd
59 Panepistimiou Ave
32-44-254

HONG KONG
Hong Kong
Cable & Wireless Systems Ltd
Box 4477
5-2831291

INDIA
Bombay
Computer Maintenance Services
201 Arcadia Nariman Pt
222370

ISRAEL
Tel-Aviv
R D T Elect Eng
46 Sokolov St
483211-5

ITALY
Milan
TCS
Via Angeloni 8
64-59-558

JAPAN
Tokyo
Japan Direx Corp
Getz Bldg; 3-18-12 Roppongi
Minato-Ku
(03) 586-8151

KOREA REP (REP)
Seoul
KDC Corporation
Box 5956
73-8236

MEXICO
Mexico City
Informatica y Telecomunicaciones
Avenida Revolucion 416
(905) 277-2965

NETHERLANDS
Veldhoven
Simac Elect
Veenstraat 20
040-533-725

NEW ZEALAND
Te Aro, Wellington
DataComm Eequipment Ltd
PO Box 6646
856-769

NIGERIA
Ibadan
Ruffy Edwards Enterprises Ltd
Box 1521
RUFED, Ibadan 22080

SINGAPORE
Singapore
NECOM Private Ltd
Room 1023 B, Maxwell House
221-2001

SOUTH AFRICA
Sandton
Delgi Electronics Pty Ltd
744 Pretoria Main Rd
011-786-2795

SPAIN
Madrid
Unitronics S A
Torre de Madrid Princessa 1
242-5204

SWEDEN
Stockholm
Datametrix ab
Box 106, Olofsgatan 1
0760 51655

SWITZERLAND
Lyss
Ete-Hager
Rosengasse 5
032-844488

TAIWAN
Taipei
Howteh Enterprises Co Ltd
65 Sung Chiang Rd
(02) 5619440

VENEZUELA
Caracas
Transdata CA
Apartado 51497
33 09 29

ATLAS ENERGY SYSTEMS
9457 Rush St
South El Monte, CA 91733
213-575-0755
Contact: Donald Raymond
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
CA Santa Ana
Atlas Energy Systems
714-953-9645
CA Santa Clara
Atlas Energy Systems
408-988-5386
IL Chicago
Atlas Energy Systems
312-372-2237
MA Cambridge
Atlas Energy Systems
617-492-2525

AUDIOTRONICS CORP
PO Box 3997
North Hollywood, CA 91609
213-765-2645

AUSCOM, INC
2007 Kramer Lane
Austin, TX 78758
512-836-8080
Contact: David A Huss
■ Products & Services
Front-end processors
Data content monitors
Computer/communications interfaces

AUTOCALL DIV/
FEDERAL SIGNAL CORP
41 E Tucker Ave
Shelby, OH 44875
419-347-2400
Contact: K C Schmunk
Contact: G K Davis
■ Products & Services
Fire detection/protection equipment
Branch Sales Offices:
AZ Phoenix
Technical Services Co Inc
723 East Maryland Ave
602-264-1738
AZ Tucson
Industrial Time Systems
805 E 20th St
602-623-6555
CA Pasadena
Autocail of S California
3220 E Foothill Blvd
213-793-0131
CA San Francisco
A H Monson Jr
1108 Howard St
415-861-2050
CO Englewood
E & M Sales Inc
3990 S Lipan St
303-761-6202
GA Chamblee
Webb-Skillas & Assoc
5241-G New Peachtree Rd
404-452-1010
GA Augusta
Webb-Skillas & Assoc
20 Eighth St
404-722-4448
IL S Holland
T F Hornaday Inc
527 W Taft Dr
312-596-7300
IN Indianapolis
C & G Communications Co
6258 La Pas Tr
317-291-3318
KY Ashland
Buchanan Sound & Communications
1409 Central Ave
606-324-8181
MA Marlboro
Autocall of New England
110 Pleasant St
617-485-0967
MA E Longmeadow
A C Incorporated
260 Shaker Rd
413-525-4250
MI Madison Hgts
Autocall of Michigan
32500 Concord
313-588-9460
MI Muskegon Hgts
Seaway Time Equipment Co Inc
2540 Peck St
616-733-2239
MN Wayzata
Protection Systems Inc
250 N Central Ave
612-473-1543
MO St Louis
R C Equipment Co
10 Clayton Downs LN
314-432-4529
NJ Ocean
Autocall-Metro
35 Dwight Dr
201-531-1208

NM Albuquerque
E & M Sales
2840 Vasser Blvd NE
505-883-8955

NY Albany
M M Hayes
257 Osborne Rd
518-459-5545

NC Matthews
T H Lingle Assoc
3100 Valentine LN
704-847-8968

OH Cincinnati
Wm J Davis Co Inc
8050 Hosbrook Rd
513-891-1972

OH Westlake
R M Austin & Assoc
26612 Center Ridge Rd
216-871-0788

PA Kulpsville
J H Metzgar
1650 Franklin St
215-326-5665

PA Monroeville
Howard A Deevers Co Inc
2549 Moss Side Blvd
412-372-4000

SC Columbia
J P Torbert
1871 Woodsboro Dr
803-798-7366

TN Alcoa
Gallagher & Assoc Inc
356 Sanderson St
615-984-7340

UT Salt Lake City
L R Smith
1324 Wilson Ave
801-521-3420

VA Chantilly
T L Garden & Assoc Inc
14650 Lee Rd
703-968-7440

VA Richmond
Autocall of Virginia
5545 Warwick Rd
804-233-5358

WA Tacoma
Autocall of Washington
7240D McKinley Ave
206-475-3393

WV Beckley
Professional Electronics Co
203 McCreery St
304-253-0473

WI Oshkosh
Protection Systems Inc
123 Snell Rd
414-725-7666

AUTOMATED EQUIPMENT INC
18430 Ward St
Fountain Valley, CA 92798
714-963-1414
Contact: Sharon MacDonald
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Microcomputer/ microprocessor systems
Disk drives, floppy
Data entry terminals
Programmable terminals
Teleprinters, impact
Video data terminals (KSR)
Applications packages
Cables, electrical prefabricated extending

THE AUTOMATED QUILL
3501 S. Corona St., #5
Englewood, CO 80110
303-761-2722
■ Products & Services
Word processors, communicating
Applications packages
Custom programs
Access program

AUTOMATIC CONTROL SYSTEMS INC
AN AFFILIATE OF QUBIT CORP
9009 Freeway Dr
Macedonia, OH 44056
216-467-2186
Contact: K S Wetzel
■ Products & Services
Microwave/laser systems
Infrared systems
FM systems

AUTOMATION PAPERS CO INC
PO Box 628; 330 Fairfield Rd.
Fairfield, NJ 07006
201-227-5535
Contact: Eileen Pierson
■ Products & Services
Paper for terminals
Ribbons and supplies for terminals and printers
Branch Sales Offices:
CA Garden Grove
Automation Papers Co Inc
7452 Orange Wood Ave
714-891-4359
FL Tampa
Automation Papers Co Inc
4753-55 Distribution Dr
800-631-9090

AUTOMATION SALES CO INC
344 40th St
Oakland, CA 94609
415-652-6675
Contact: Kevin Picchi
■ Products & Services
Automatic answering units
Branch Sales Offices:
CA Oakland
Automation Sales Co Inc
344-40th St
415-652-6675
MO St Louis
Judd Presley
13354 Thornhill Dr
314-821-8677

AUTO-TROL TECHNOLOGY CORP
12500 N Washington St
Denver, CO 80233
303-452-4919
Contact: James Hammock
■ Products & Services
Graphic display terminals
Interactive terminals
Branch Sales Offices:
CA Irvine
Auto-Trol Technology Corp
Michelson Plaza 2151 Michelson Dr
714-955-1911
CA Chatsworth
Auto-Trol Technology Corp
21021 Devonshire St
213-709-7841
CA Fremont
Auto-Trol Technology Corp
Murco Plaza 39111 Paseo Padre Pkwy
415-794-7411

CT Norwalk
Auto-Trol Technology Corp
91 East Ave
203-852-1005

GA Atlanta
Auto-Trol Technology Corp
1150 Hammond Dr
404-396-7100

IL Oak Brook
Auto-Trol Technology Corp
2803 Butterfield Rd
312-920-6840

LA New Orleans
Auto-Trol Technology Corp
6305 Elysian Fields Ave
504-282-2577

MI Troy
Auto-Trol Technology Corp
3290 West Big Beaver Rd
91 East Ave

MI Grand Rapids
Auto-Trol Technology Corp
1500 East Beltline Ave SE
616-957-2230

MN Bloomington
Auto-Trol Technology Corp
9001 East Bloomington Ave
612-881-5512

NH Londonderry
Auto-Trol Technology Corp
Londonderry Professional Park Route 102
603-434-8841

NJ Roseland
Auto-Trol Technology Corp
101 Eisenhower Pkwy
201-226-9000

NY Pittsford
Auto-Trol Technology Corp
642 Kreag Rd
716-248-8130

OK Tulsa
Auto-Trol Technology Corp
5515 East Skelly
918-665-2150

PA Blue Bell
Auto-Trol Technology Corp
Merion-Towle House 1777 Walton Rd
215-643-6040

PA Pittsburgh
Auto-Trol Technology Corp
Building 1 201 Penn Center Blvd
412-823-3340

TX Dallas
Auto-Trol Technology Corp
14673 Midway Rd
214-661-8027

TX Houston
Auto-Trol Technology Corp
8550 Katy Frwy
713-932-0060

VA Vienna
Auto-Trol Technology Corp
301 Tower 301 Maple Ave W
703-281-1764

WI Brookfield
Auto-Trol Technology Corp
13555 Bishops Ct
414-784-7171

AVANTI COMMUNICATIONS CORP
Aquidneck Ind Pk
Newport, RI 02840
401-849-4660
Contact: Richard P Berger
■ Products & Services
Modem sharing units
Line drivers
Modems, limited distance
Modems, multipoint

Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Modem eliminators
Computer/communications interfaces
Data communications consultants

Branch Sales Offices:

CA Mountain View
CSS Telecommunications
2680 Bay Shore Frontage Rd
415-964-4335

CO Englewood
Barnhill Three, Inc
7076 S Altons Way
303-779-3600

FL Indian Harbour Beach
General Technologies
415 Palm Springs Blvd
305-777-1133

IL Rolling Meadows
Sea Inc
1225 Carnegie St
312-255-4820

IL Schaumburg
Avanti Communications Corp
999 Plaza Dr
312-885-2155 or 312-885-2182

IN Carmel
SEA Inc
624-B S Rangeline Rd
317-846-2591

MD Edgewater
Commart Distribution Inc
600 Central Ave

MA Framingham
Data Comm Assoc
1 Birchmeadow Cir
617-877-2984

MI Ann Arbor
Ashby Associates Inc
4141 Jackson Rd
313-996-5788

MN Minneapolis
Sea Inc
7601 N Kentucky Ave
612-425-4455

MO Grandview
Digital Systems Sales Inc
4006 E 137 Terr
816-765-3337

NJ Ridgewood
Instrumentation Sales Co
Box 403
201-445-5210

NY Selkirk
RG Engineering
6 Sherbrook Dr
518-439-3070

TX San Antonio
Technical Concepts Corp
8415 Datapoint Dr
512-699-6345

VA Richmond
Avanti Communications Corp
11504 Allecingie Pkwy
804-794-4432

WA Seattle
CSS Telecommunications
8609 Roosevelt Way NE
206-527-4750

WA Vancouver
Avanti Communications Corp
10501 NE 22nd St
206-254-8844

WA Redmond
Control Q
14828 NE 31st Circle
206-881-7473

WA Seattle
Ben/Dav Sales
3204 NE 123rd St
206-367-3437

WI Waukesha
Sea Inc
2423 Pebble Valley Rd
414-547-6637

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

AXIOM CORP
1014 Griswold Ave
San Fernando, CA 91340
213-365-9521
Contact: Simon J Harrison

Branch Sales Offices:

CA Sunnyvale
Electronic Marketing Specialists
599 N Mathilda Ave
408-245-9291

CA Sherman Oaks
Electronic Marketing Specialists
13837 Ventura Blvd
213-990-4244

CA Tustin
Electronic Marketing Specialists
2600 Walnut Ave
714-832-9920

CT Stamford
NPM Assoc Inc
64 Pinnacle Rock
203-329-0022

IL Des Plaines
Lincoln Hodges & Assoc
3158 Des Plaines Ave
312-297-3810

MD Gaithersburg
General Scientific Corp
Box 2145
301-840-9545

MI Ann Arbor
Lincoln, Hodges & Assoc
201 S Main St
313-995-2155

NY Mt Vernon
Sonkin Assoc
10 Fiske Pl
914-668-9809

PA Glenside
Wyncote Instrumentation Co
2689 Limekiln Pike
215-576-5505

TX Dallas
J Clay Co
2619 Electronic Ln
214-350-1281

TX Alief
J Clay Co
Box 656
713-777-4131

WA Bellevue
Hood Eng
12835 Bellevue-Redmond Rd
206-453-9375

WI Waukesha
Lincoln Hodges & Assoc
217 Wisconsin Ave
414-542-3087

AUSTRALIA
Auburn NSW 2144
Warburton Franki Pty Ltd
199 Parramatta Rd
011-61-2-678-1711

BELGIUM
Brussels 1150
Intercontinental Services Inc
Avenue Chant d'Oiseau 106;Vogelzanglaan
011-32-2-647-9845

ENGLAND
Thame Oxon
Memec Ltd
Thame Park Ind Estates
011-4-84-421-3146

FRANCE
F-92220 Bagneux
Auctel
143 Rue des Meuniers
011-33-41-664-10-50

GERMANY, WEST
8000 Munich
Wetronic Automation
Claude Lorraine Strasse 29
011-49-89-652-096

INDIA
Madras
Promac
37 McNichols Rd
662190

ISRAEL
Tel-Aviv
Milchan Bros Ltd
29 Karlebach St
011-3-285282

JAPAN
Yokohama
Nippon Hamlin
88 Komaoka-Cho

NETHERLANDS
Hertogenbosch
Compudata
Rietveldenweg 49
011-31-73-215700

NORWAY
N-Oslo
ITT Instrument
Postboks 130;Kaldbakken
011-47-2-162-610

SOUTH AFRICA
Cape Town
Eagle Electronics
31-41 Hout St
011-27-21-45-1421

SPAIN
Madrid
Unitronics SA
Torre de Madrid;Pl 12
011-34-1-242-5204

SWEDEN
Vaxholm
Saven AB
Strandgatan 3;S-185 000
011-46-764-315-80

SWITZERLAND
8008 Zurich
Omni Ray
Dufourstrasse 56
011-41-1-47-8200

TAIWAN
Taipei
Syscom Computer Engineering
358 Block 1141 Kimtian Rd
011-65-2-700411

VENEZUELA
Caracas
Digidata
Apartado de Correos 70657
011-58-2-387357

AYDIN COMPUTER SYSTEMS
401 Commerce Dr
Ft Washington, PA 19034
215-643-0600
Contact: Jack Writer

■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
CA San Jose
Aydin Controls/Aydin Microwave
75 Trimble Rd
408-946-5600
CA Westlake Village
Aydin Controls
1567 Covington Ave
213-991-1070
DC Washington
Aydin Controls/Aydin Corp
475 L'Enfant Plaza
202-488-4138
FL Sanford
Aydin Controls
100 Par Pl
305-322-8159
MD Lanham
Aydin Controls
5900 Princess Garden Pkwy
301-459-8373
MA Sharon
Aydin Controls
459 Massapoag Ave
617-784-2562
MI Southfield
Aydin Controls
30233 Southfield Rd
313-647-5030
PA Ft Washington
Aydin Controls
414 Commerce Dr
215-542-7800
TX Spring
Aydin Controls
4059 Evening Tr
713-444-7740
WA Seattle
Aydin Controls
331 Andover Park East
206-575-8217
AUSTRALIA
Melbourne
Datatel
3-7 Raglan St
03-699-7614/7920
DENMARK
Glostrup
Technitron ApS
Smedeland 8
2-96-98-22
ENGLAND
Hertfordshire
Aydin Controls/Vector UK
Andre House, Salisbury SQ
44-7072-71281
FRANCE
Sevres 92310
Tekelec Air Tronic
Rue Carle Vernet BP #2
1-534-75-35
GERMANY, WEST
Munich 2
Logotec GmbH
Gabelsbergerstrasse 30
089-525028
GREECE
Athens
Valliant Ltd
Niriidon 4-6
718-246
HONG KONG
Hong Kong
Patrick Trading Corp
5 Queens Rd Central
5-220964
INDIA
Madras 600004
Indchem Electronics Private Ltd
105 Dr Radhakrishnan Salai
848667
INDONESIA
Barat
P T Electronika Nusantara
JIS Parman 105, Jakarta
592026/8
ITALY
Milan
Technitron Srl
Via California 12
02-4690312
JAPAN
Tokyo
Pentel Elctns Ltd
7-11 Shinkawa 1 Chome Chuo-Ku
03-553-2371
NETHERLANDS
Amsterdam
Technitron B V
Box 7542 1117 AG Schipol
020-458755
PAKISTAN
Karachi 2
General Services Corp
Box 5694;1.1 Chundrigar Rd
23-53-83
SAUDI ARABIA
Riyadh
Aydin Corp
Box 6
80-011-966-1-476-3594
SO. W. AFRICA (NAMIBIA)
Bokesburg 1460
E L Bateman Co
Box 565
899-2603
SPAIN
Madrid 19
Aplein Ingenieros S A
Av Valvanera 2
429-8963
SWEDEN
Farsta 1
Tel Inter Aktiebolag
Box 59 S-123
0894-0490
TURKEY
Ankara
Aydin Corp
Bugday Sokak 2/3;Kavaklidere
27-81-60

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

AYDIN CONTROLS
414 Commerce Dr
Ft Washington, PA 19034
215-542-7800
Contact: J. Taylor
■ Products & Services
DDP systems
Minicomputers
Data entry terminals
Graphic display terminals
Interactive terminals
Branch Sales Offices:
CA San Jose
Aydin Controls/Aydin Microwave
75 Trimble Rd
408-946-5600
CA Westlake Village
Aydin Controls
1567 Covington Ave
213-991-1070
DC Washington
Aydin Controls/Aydin Corp
475 L'Enfant Plaza
202-488-4138
FL Sanford
Aydin Controls
100 Par Pl
305-322-8159
MD Lanham
Aydin Controls
5900 Princess Garden Pkwy
301-459-8373
MA Sharon
Aydin Controls
459 Massapoag Ave
617-784-2562
MI Southfield
Aydin Controls
30233 Southfield Rd
313-647-5030
PA Ft Washington
Aydin Controls
414 Commerce Dr
215-542-7800
TX Spring
Aydin Controls
4059 Evening Tr
713-444-7740
WA Seattle
Aydin Controls
331 Andover Park East
206-575-8217
AUSTRALIA
Melbourne
Datatel
3-7 Raglan St
03-699-7614/7920
DENMARK
Glostrup
Technitron ApS
Smedeland 8
2-96-98-22
ENGLAND
Hertfordshire
Aydin Controls/Vector UK
Andre House, Salisbury SQ
44-7072-71281
FRANCE
Sevres 92310
Tekelec Air Tronic
Rue Carle Vernet BP #2
1-534-75-35
GERMANY, WEST
Munich 2
Logotec GmbH
Gabelsbergerstrasse 30
089-525028
GREECE
Athens
Valliant Ltd
Niriidon 4-6
718-246
HONG KONG
Hong Kong
Patrick Trading Corp
5 Queens Rd Central
5-220964
INDIA
Madras 600004
Indchem Electronics Private Ltd
105 Dr Radhakrishnan Salai
848667
INDONESIA
Barat
P T Electronika Nusantara
JIS Parman 105, Jakarta
592026/8

ITALY
Milan
Technitron Srl
Via California 12
02-4690312
JAPAN
Tokyo
Pentel Elctns Ltd
7-11 Shinkawa 1 Chome Chuo-Ku
03-553-2371
NETHERLANDS
Amsterdam
Technitron B V
Box 7542 1117 ZG Schipol
020-458755
PAKISTAN
Karachi 2
General Services Corp
Box 5694;1.1 Chundrigar Rd
23-53-83
SAUDI ARABIA
Riyadh
Aydin Corp
Box 6
80-011-966-1-476-3594
SO. W. AFRICA (NAMIBIA)
Bokesburg 1460
E L Bateman Co
Box 565
899-2603
SPAIN
Madrid 19
Aplein Ingenieros S A
Av Valvanera 2
429-8963
SWEDEN
Farsta 1
Tel Inter Aktiebolag
Box 59 S-123
0894-0490
TURKEY
Ankara
Aydin Corp
Bugday Sokak 2/3;Kavaklidere
27-81-60

AZURDATA INC
4102-148 Ave NE
Redmond, WA 98052
206-881-5100
Contact: Sonja Neal
■ Products & Services
Bar code readers
Programmable terminals
Portable data entry terminals
Remote job entry terminals
Branch Sales Offices:
CA Tustin
Azurdata Inc
1020 Irvine Blvd
714-543-2040
CA Burlingame
Azurdata Inc
1633 Old Bayshore Hwy
GA Lithonia
Azurdata Inc
6399 Evansmill Way
404-482-6020
IL Lombard
Azurdata Inc
2233 South Highland Ave
312-620-1112
MA Boston
Azurdata Inc
50 Stanford St
617-266-3311
MN St Paul
Azurdata Inc
2233 Hamline Ave
612-483-4503
MO St Louis
Azurdata Inc
711 Old Ballas Rd
314-576-4411
NY Ossining
Azurdata Inc
44th South Highland
914-762-6450
PA Bridgeville
Azurdata Inc
548 Hunters Path Rd
412-344-4488
TX Addison
Azurdata Inc
15840 Addison Rd
214-934-8040
ONTARIO, CANADA
Etobicoke ON
Azurdata Inc
Box 83;Islington Sta B
416-625-5934

BACKUS DATA SYSTEMS INC
1440 Koll Circle
San Jose, CA 95112
408-279-8711
Contact: A W Backus
■ Products & Services
Concentrators
Line sharing units
Modem sharing units
Port sharing units
Acoustic couplers
Disk drives, floppy
Disks, floppy
Electronic mailboxes
Floppy disk recorders
Code converters

BALL COMPUTER PRODUCTS DIV
PO Drawer K
Boulder, CO 80306
303-441-4646
Contact: Prentiss Smith
■ Products & Services
Disk drives, large
Branch Sales Offices:
TX Richardson
Ball Computer Products Div
100 N Central Expy
214-231-5418

BASF SYSTEMS CORPORATION
Crosby Dr
Bedford, MA 01730
617-271-4000
Contact: David Pippin
■ Products & Services
Cartridges
Cassettes
Disk drives, floppy
Disks, floppy
Disk packs
Tape, magnetic
Branch Sales Offices:
CA Santa Monica
BASF Systems Corp
1307 Colorado Av
213-451-8781
CA Newport Beach
BASF Systems Corp, Memory Div
1100 Quail St
714-752-6126
CA Los Gatos
BASF Systems Corp
90 Albright Way
408-379-5731
CA San Bruno
BASF Systems Corp
Box 1149
415-697-1523
CO Littleton
BASF Systems Corp
10214 W Lake Dr
303-427-0232
IL Palatine
BASF Systems Corp
800 E NW Hwy
312-934-4990
KS Lenexa
BASF Systems Corp
12538 West 81st Pl
913-967-6898
ME Bedford
BASF Systems Corp
Crosby Dr
617-271-6608
ME Bedford
BASF Systems Corp, Memory Div
Crosby Dr
617-271-4168
MI Northville
BASF Systems Corp
24570 Wixom Rd
313-349-0470
MN Bloomington
BASF Systems Corp
8120 Penn Ave
612-884-1002
OH Cincinnati
BASF Systems Corp
9772 Princeton Rd
513-874-2121
OH No Olmsted
BASF Systems Corp
4049 Darby Ln
213-333-3460
TX Dallas
BASF Systems Corp
13612 Midway Rd
214-233-6607
TX Houston
BASF Systems Corp
5629 FM 1960 W
713-440-4028
ONTARIO, CANADA
Rexdale
BASF Canada Ltd
10 Constellation Ct
416-677-1280
QUEBEC, CANADA
Montreal
BASF Canada Ltd
5850 Cote de Liesse Rd
514-341-5411
GERMANY, WEST
Mannheim
BASF Aktiengesellschaft
Sparte M & N/Verkauf;
Gottlieb-Daimler-Strasse 10
49/621-40081

BBN INFORMATION MGMT CORP
68 Moulton St
Cambridge, MA 02238
617-497-2929
Contact: John M McQuillan
■ Products & Services
Message switchers
Message Systems (Video)
Electronic mailboxes
Word processors, communicating
Personal computer communications software
Word processing packages
Branch Sales Offices:
DC Arlington
1701 N Ft Myer Dr
703-524-4870

BEDFORD COMPUTER SYSTEMS INC, A DIV OF DISTRIBUTED SYSTEMS CORP
4 Lyberty Way
Westford, MA 01886
617-275-0870
Contact: Donald Beers
■ Products & Services
Microcomputer/ microprocessor systems
Bar code readers
Interactive terminals
Computer/communications interfaces

BEEHIVE INTERNATIONAL
4910 Amelia Earhart Dr; Box 25668
Salt Lake City, UT 84125
801-355-6000
Contact: Chuck Srogus
■ Products & Services
Programmable terminals
Interactive terminals
Remote job entry terminals
Video data terminals (KSR)
Branch Sales Offices:
CA Costa Mesa
Beehive International
3190 G Airport Loop Dr
714-540-8404
CO Sunnyvale
Beehive International
1022 W Maude
408-738-1560
FL Altamonte Springs
Beehive International
251 Maitland Ave
305-830-4666
IL Arlington Heights
Beehive International
415 W Golf Rd
312-593-1565
MA Woburn
Beehive International
304 Cambridge Rd
617-933-0202
NY New York
Beehive International
420 Lexington Ave
212-682-2760
UT Salt Lake City
Beehive International
4910 Amelia Earhart Dr
801-355-6000
VA Falls Church
Beehive International
7777 Leesburg Pike
703-356-5133
NETHERLANDS
Amsterdam
Beehive International
Schipol Airport; Bldg 70 Schipol East
020-451522

BEHLMAN ENGINEERING CORP
1142 Mark Ave
Carpinteria, CA 93013
805-684-8311
Contact: Edward C Bertolet
■ Products & Services
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AZ Phoenix
Davis Co
3431 N 43 St
602-955-2266
CA Los Angeles
T L Snitzer Co
9005 Exposition Blvd
213-836-6170
CA Cupertino
T L Snitzer Co
10320 DeAnza Blvd
408-257-8333
CA Del Mar
T L Snitzer Co
Box 805
714-226-0305
FL Satellite Beach
Reynolds & Assoc
476 N A1A
305-773-4700
MD Rockville
Farrell Assoc
416 Hungerford Dr
301-424-9460
MA Needham
Addelco
56 Pickering
617-444-4754
MN St Paul
Dytec North
1821 University Ave
612-645-5816
PA Chester Springs
Letronix
Rt 100
215-458-8977

BELDEN CORP
2000 S Batavia
Geneva, IL 60134
Contact: Charles Pater
■ Products & Services
Line drivers
Modem eliminators
Parallel line extenders
Cables, electrical prefabricated extending
Branch Sales Offices:
CA Irvine
Belden Corp
2222 Martin St
714-833-7700
IN Richmond
Belden Corp Electronic Div
Box 1980
317-983-5200
MA Framingham
Belden Corp
1661 Worcester Rd
617-872-7846

BELL & HOWELL
CEC DIV
360 Sierra Madra Villa
Pasadena, CA 91109
213-796-9381

BENSON INC
385 Ravendale Dr
Mountain View, CA 94043
415-965-9900
Contact: Charles Joseph
■ Products & Services
Tape drives, magnetic
Digital plotters
Branch Sales Offices:
CA Cupertino
20395 Pacifica Dr
408-446-5015
CA Irvine
2081 Business Center Dr
714-833-7878
CO Englewood
5680 South Syracuse Circle
303-773-8813
FL Dundee
PO Drawer 905
813-439-2665
IL Park Ridge
205 West Touhy Ave
312-825-6680
MD Landover
830 Professional Pl
301-459-7575
MA Burlington
121 Middlesex Tnpk
617-273-3316
NJ Fort Lee
2175 Lemoine Ave
201-944-9790
TX Dallas
13531 N Central Expwy
214-231-5936
TX Houston
6420 Hillcroft
713-777-6250

BIZCOMP CORPORATION
Box 7498
Menlo Park, CA 94025
415-966-1545
Contact: Laurel Lea
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Automatic answering units
Automatic calling units
Data access arrangement devices
Branch Sales Offices:
CA Santa Clara
Reiad Chikhani, RC Data, Inc
346 Matthew St
408-988-7510
CA Woodland Hills
Pacific Mountain States
6319-B DeSoto Ave
213-999-2281
CT Bethel
Gemini Data Comm
153 Greenwood Ave
203-748-5506
KS Wichita
Computer Systems Design
906 N Main St
316-265-1120
MA Westford
SBSG, Inc
6 Carlisle Rd
617-692-3800
MI Ann Arbor
Lincoln, Hodges Assocs
201 S Main St
313-995-2155
MN Minneapolis
On-Line Supply
7217 Cahill Rd
612-941-5555

BLACK BOX CATALOG, EXPANDOR INC
400 St Claire Plaza
Pittsburgh, PA 15241
412-746-2910
Contact: R C Raub
■ Products & Services
Line sharing units
Modem sharing units
Port sharing units
Acoustic couplers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
Parallel line extenders
EIA cable testers
Electrical-parameters test equipment
Protocol analyzers
Response-time monitors
RTS emulator

Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data jacks and plugs
Protocol converters
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

BMS DATA HANDLING INC
12155 Magnolia Ave
Riverside, CA 92503
714-781-5588
Contact: Larry Cunningham
■ Products & Services
Batch terminals
Data entry terminals
Remote line printers
Remote job entry terminals
Code converters
Protocol converters
Maintenance organizations
Branch Sales Offices:
CA Riverside
BMS Data Handling Inc
12155 Magnolia Ave
714-781-5588

BOEING COMPUTER SERVICES COMPANY
177 Madison Ave
Morristown, NJ 07960
201-540-7700
Contact: Stanley C Beckelman
■ Products & Services
Data communications consultants
Educational services
Timesharing/service bureaus
Branch Sales Offices:
AK Anchorage
Boeing Computer Services Co
3230 C St
907-278-1511
CA Los Angeles
Boeing Computer Services Co
5757 W Century Blvd
213-417-5010
CA Sunnyvale
Boeing Computer Services Co
310 Potrero
408-245-8550
CA San Francisco
Boeing Computer Services Co
425 California St
415-392-6565
CA Newport Beach
Boeing Computer Services Co
4029 Westerly Pl
714-833-1273
CA San Diego
Boeing Computer Services Co
2254 Moore St
714-294-9920
CA Sacramento
Boeing Computer Services Co
530 Bercut Dr
916-447-2113
CO Englewood
Boeing Computer Services Co
7995 E Prentice Ave
303-770-2630
GA Atlanta
Boeing Computer Services Co
5775-A Peachtree-Dunwoody Rd
404-247-5500
IL Chicago
Boeing Computer Services Co
35 E Wacker
312-781-7900
KS Wichita
Boeing Computer Services Co
453 S Webb Rd
316-688-6911
MA Boston
Boeing Computer Services Co
177 Milk St
617-451-1555
MI Dearborn
Boeing Computer Services Co
One Parklane Blvd
313-271-8000
NE Omaha
Boeing Computer Services Co
7171 Mercy Rd
402-397-2400
NY New York
Boeing Computer Services Co
560 Lexington Ave
212-310-0600
OH Cleveland
Boeing Computer Services Co
20600 Chagrin
216-921-0800
OR Portland
Boeing Computer Services Co
5100 SW Macadam Ave
503-242-2500
PA Philadelphia
Boeing Computer Services Co
2000 Market St
215-567-6704
TX Dallas
Boeing Computer Services Co
1111 W Mockingbird Lane
214-630-4701
TX Houston
Boeing Computer Services Co
2900 North Loop West
713-680-3333
VA Vienna
Boeing Computer Services Co
7980-90 Gallows Court
703-821-6200
WA Seattle
Boeing Computer Services Co
6510 S Center Blvd
206-773-8683
ALBERTA, CANADA
Calgary
Boeing Computer Services Canada Ltd
255 5th Ave SW
403-269-8281
ALBERTA, CANADA
Edmonton
Boeing Computer Services Canada Ltd
10123 99th St
403-426-0167
BRITISH COLUMBIA, CANADA
Vancouver
Boeing Computer Services Canada Ltd
1176 W Georgia St
604-688-2266
ENGLAND
London
Boeing Computer Centres Ltd
19 Fitzroy St
011-44-163-10808

BOOLE & BABBAGE INC
510 Oakmead Pkwy
Sunnyvale, CA 94086
408-735-9550
Contact: Dennis Crow
■ Products & Services
Data security devices: software security modules
Educational services
Branch Sales Offices:
CA El Segundo
Boole & Babbage Inc
999 Sepulveda Blvd
213-640-2138
CA Larkspur
Boole & Babbage Inc
1100 Larkspur Landing Circle
415-461-7171
GA Atlanta
Boole & Babbage Inc
2022 Powers Ferry Rd
404-955-6568
IL Oakbrook
Boole & Babbage Inc
2115 Butterfield Rd
312-629-8910
ME Waltham
Boole & Babbage Inc
235 Bear Hill Rd
617-890-3288
MI Mt Clemens
Boole & Babbage Inc
34820 Harper Ave
313-792-6350
MO Chesterfield
Boole & Babbage Inc
14500 South Outer Forty Rd
314-434-5100
NJ Englewood Cliffs
Boole & Babbage Inc
661 Palisade Ave
201-871-3550
TX Dallas
Boole & Babbage Inc
12201 Merit Dr
214-385-8076
VA Falls Church
Boole & Babbage Inc
254 No Washington St
703-241-8790
AUSTRALIA
New South Wales
IP Computer Consultants Pty Ltd
7 Railway St Chatswood 2067
411 3522
BRAZIL
Grajau-Rio de Janeiro
Boole & Babbage do Brasil
Rua Jeronimo De Lemos 162
ENGLAND
Sunninghill Berkshire
The European Software Company Ltd
Kingswick House
0990-23491
FRANCE
75008-Paris
Compagnie Europeenne de Progiciel
25, Rue de Berri
359-03-24
GERMANY, WEST
4000 Duesseldorf 1
The European Software Company GmbH
Jahnstrasse 1
0211-370794

GERMANY, WEST
8000 Muenchen 22
ESC Software GmbH
Hildegardstrasse 6
089-221710

ISRAEL
Tel Aviv
Advanced Technology Ltd
Atidim, Neveh Sharet
48 32 52

ITALY
20123-Milano
ESC Software, S r l
Via Gabrio Casati, 1
02-879795

ITALY
00187 Roma
ESC Software, S r L "Pingest"
Via Porta Pinciana 4
6-4756143

JAPAN
Shinjuki-ku
Tokyo System Laboratories Inc
Meiho Bldg 1-21 Nishi-Shinjuku
03 342-2651

NETHERLANDS
2514 JT The Hague
The European Software Co
Nassaulaan 21
070-604908

NORTHERN IRELAND
Dublin 2
The European Software Company Ltd
5 Herbert Pl
602676/602841

SOUTH AFRICA
2001 Johannesburg
CAP Computer Analysts and Programmers Pty Ltd
Kine Centre Commissioner St
011-21.21.44

SWEDEN
100 72 Stockholm
The European Software Company Ltd
Liljeholmstorget 12 Box 43060
08-7445841

BOOTSTRAP LTD
27a Albert Rd
Sandycove, Dublin
Ireland
01-801186
Contact: P White
■ Products & Services
Acoustic couplers
Line drivers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Computer/communications interfaces
Data communications consultants
Educational services
Branch Sales Offices:
NETHERLANDS
The Hague
Repko b v
Koningsplein 31
070-469530

BOSCHERT INC
384 Santa Trinita Ave
Sunnyvale, CA 94086
408-732-2400
Contact: Lee Macklin
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:
AZ Scottsdale
Fred Board Assoc
7353 Sixth Ave
602-994-9388

CA Sunnyvale
Criterion Inc
3350 Scott Blvd
408-988-6300

CO Denver
Electrodyne
4600 E Asbury Cir
303-759-4409

FL Altamonte Springs
EIR
701 Semoran Blvd
305-830-9600

MI Brighton
SAI Mktg Corp
9880 E Grand River
313-227-1786

MN Minneapolis
Stan Clothier Co
7423 Washington S
612-944-3456

NJ Marlton
Boschert
136 Briar Ct
609-983-6240

NJ Marlton
BGR
3001 Green Tree Exec Campus
609-428-2440

NY Ithaca
Bob Dean Inc
710 W Clinton St
607-272-2187

TX Dallas
Microsystems Mktg
13777 N Central Expwy
214-238-7157

VA Lynchburg
Glen White Assoc
311 Old Forest Rd
804-384-1538

WA Bellevue
Olson Ferrec
12727 NE 20th
206-883-7792

ONTARIO, CANADA
Ontario
Munro Elect
7171 Torbram Rd
416-676-1042

BELGIUM
Bruxelles
Bodelco SA Electronics
32 Av Herbert Hoover
(0032) 0-27354137

DENMARK
Copenhagen
Scansupply
20 Nannasgade; DK-2200
01-83-50-90

ENGLAND
Thame; Oxon
Memec Ltd
Thame Pk Ind Est

FINLAND
Helsinki 55
SW Instruments
Kabstulantie 4B

FRANCE
Paris
Tekelec
Cite Des Bruyeres, Bve Carle Vernet

GERMANY, WEST
Vaterstetten
Boschert
Primelstrasse
08106-8644

GERMANY, WEST
Munchen 80
Bitronic
Einsteinstr 127

GERMANY, WEST
Eching 6, Munchen
Kontron
Breslauer Strasse 2

NETHERLANDS
Rijswijk
Bodelco BV Elect
Verrijn Stuartlaan 29

SWITZERLAND
Mutschellen
W Stolz AG
Bellikonerstr 218
057-54655

BO-SHERREL CO
6101 Jarvis Ave
Newark, CA 94560
415-792-0354
Advertising page 66
Contact: Carlene L Rathert
■ Products & Services
Line drivers
Modems, limited distance

BOSTON FINANCIAL & EQUITY CORP
712 Beacon St
Boston, MA 02215
617-437-2750
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, frequency division
Multiplexers, statistical (intelligent)
Multiplexers, group band
Remote network processors
Acoustic couplers
Digital service units
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Minicomputers
Add-on main memory
Cartridge drives
Cassette drives
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Tape punch/reader, paper
Batch terminals
Graphic display terminals
Programmable terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Automatic calling units
Cables, electrical prefabricated extending
Data access arrangement devices
Switches, data communications: automatic
Switches, data communications: manual
Lease and resale organizations
Used equipment

BOWMAR/ALI INC
531 Main St
Acton, MA 01720
617-263-8365
Contact: J B Bender
■ Products & Services
Error rate detectors
Branch Sales Offices:
CT Darien
Massini Assoc
Box 2044
203-323-9945
FL Melbourne
EME III
1495 N Harbor City Blvd
305-259-2711
GA Decatur
EME II
2522 Tanglewood
404-325-0165
MD Edgewater
Commart Inc
3910 W Shore Dr
301-261-4344
NC High Point
EME I
112 Buena Vista
919-869-3335

BRADLEY TELCOM CORP
117 Ft Lee Rd
Leonia, NJ 07605
201-461-5903
■ Products & Services
Electrical-parameters test equipment
Technical control centers
Selection & transfer equipment: monitor & test switching equipment
Branch Sales Offices:
CA Newport Beach
Helfrich Co
1831 Kings Rd
714-631-2300
CA Walnut Creek
Helfrich Co
1566 Spring Brook Rd
415-938-9577
CA Cerritos
Helfrich Co
13047 Rose St
213-926-7715
GA Atlanta
Datec Customer Service Inc
2200 Edgemore Dr
404-622-3196
MD Edgewater
Commart Inc
3910 W Shore Dr
301-261-4344
MN Minneapolis
Rae Assoc
7317 Cahill Rd
612-835-2100

THE BRAEGEN CORP
20740 Valley Green Dr
Cupertino, CA 95014
408-255-4200
Contact: Robert Beaver
■ Products & Services
Concentrators
Front-end processors
Packet processors
DDP systems
Add-on main memory
Cartridge drives
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Batch terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Maintenance organizations
Branch Sales Offices:
CA Rodondo Bch
Braegen Corp
213-679-2268
CA Orange
Braegen Corp
714-978-1720
CA Santa Clara
Braegen Corp
408-496-6578
CO Denver
Braegen Corp
303-340-1062
CT Greenwich
Braegen Corp
212-736-8873
CT Hartford
Braegen Corp
203-622-0293
GA Norcross
Braegen Corp
404-449-4610
IL Rosemont
Braegen Corp
312-693-6030
MA Waltham
Braegen Corp
617-890-4850
MI Southfield
Braegen Corp
313-559-5750
MN Minneapolis
Braegen Corp
612-831-5007
MO St Louis
Braegen Corp
314-968-4314
NJ Union
Braegen Corp
201-687-5030
NY NY
Braegen Corp
212-622-0293
OH Cleveland
Braegen Corp
216-362-7280
PA Bala Cynwyd
Braegen Corp
215-667-1740
PA Pittsburgh
Braegen Corp
412-922-5336
TX Dallas
Braegen Corp
214-386-4777
TX Houston
Braegen Corp
713-776-3840
VA McLean
Braegen Corp
703-442-8504
WA Bellevue
Braegen Corp
206-747-9321

BRAEMER COMPUTER DEVICES INC
11950 12 Ave S
Burnsville, MN 55337
612-890-5135
Contact: Richard Morris
■ Products & Services
Cassette drives
Branch Sales Offices:
AL Huntsville
Alpha Marketing Inc
904 Bob Wallace Av
204-533-0766
FL Ft Lauderdale
Interface Dynamics
1430 NE 60 St
305-772-7998
GA Tucker
Alpha Mktg
3985 Northlake Creek Dr
404-491-9430
IN Carmel
Brainard Wilson Marketing
597 Industrial Dr
317-844-2800
IA W Des Moines
Nevco Inc
730-34 St Pl
515-225-9866
MA Waltham
Media Systems Inc
244 Second Ave
617-890-6394
MI Farmington
Carter-McCormic-Peirce
23995 Freeway Pk Dr
313-477-7700
MO Kansas City
Nevco Inc
1715 Baltimore
816-421-1751
MO St Louis
Nevco Inc
10132 Glenfield Terr
314-843-7406
NJ Bogata
Neville & Vespo Corp
114 E Main St
201-487-1505
NY Cazenovia
Naylor Electronic Co Inc
9 Clark St
315-655-8174
OH Cleveland
Carter-McCormic-Peirce
22650 Lorain Rd
216-779-5100
OH Dayton
Carter-McCormic-Peirce
4977 Northcutt Pl
513-222-7700
OR Portland
Tasco Inc
9999 SW Wilshire
503-292-1473
PA Dresher
J Fishman & Assoc
1645 Dublin Rd
215-646-3666
PA Pittsburgh
Carter-McCormic-Peirce
409 Beatty Rd
412-372-4415
WA Bellevue
Tasco Inc
606-110 Ave NE
206-453-1414

BRAIN POWER INCORPORATED
4470 SW 74th Ave
Miami, FL 33155
305-264-4465
Contact: Dr Philip Bartick II
■ Products & Services
Line drivers
Modem eliminators
Microcomputer/ microprocessor systems
Applications packages

W A BROWN INSTRUMENTS
PO Box 513
Orlando, FL 32802
305-425-5505
Contact: J Edward Bucher
■ Products & Services
Modem sharing units
Multiplexers, statistical (intelligent)
Port selectors
Port sharing units
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Tape punch/reader, paper
Badge readers
Bar code readers
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Remote line printers
Teleprinters
Teleprinters, impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Word processors, communicating
Code converters
Data security devices: encoder/decoders
Furniture, cabinets, terminal enclosures
Ribbons and supplies for terminals and printers
Maintenance organizations
Branch Sales Offices:
AL Huntsville
W A Brown Instruments Inc
Box 4560
205-883-8660
FL Orlando
W A Brown Instruments Inc
222 Weber St
305-425-5505
FL Ft Lauderdale
W A Brown Instruments Inc
961 NW 53rd St
305-776-4800
FL Melbourne
W A Brown Instruments Inc
701 Lincoln Ave
305-723-0766
GA Atlanta
W A Brown Instruments Inc
3070 Presidential Dr
404-455-1035
LA Mandeville
W A Brown Instruments Inc
Box 786
504-626-9701
NC Durham
W A Brown Instruments Inc
828 Glendale Ave
919-683-1580
TN Oak Ridge
W A Brown Instruments Inc
132 Fairbanks Rd
615-482-5761

BTI COMPUTER SYSTEMS
870 W Maude Ave
Sunnyvale, CA 94086
408-733-1122
Contact: Downey Overton
■ Products & Services
Minicomputers
Branch Sales Offices:
CA Sunnyvale
BTI
977 Benioia Ave
408-749-0500
CA El Monte
BTI
11100 Valley Blvd
213-350-4383
CO Englewood
BTI
7346 S Alton
303-771-3069
CT West Hartford
BTI
1010 Farmington
203-233-6288
GA Atlanta
BTI
1155 Hammond Dr
404-396-1630
IL Palatine
BTI
2401 Plum Grove Rd
312-397-9190
MA Frammaham
BTI
1000 Worchester Rd
617-875-1122
MN Minneapolis
BTI
3001 Metro Dr
612-854-1122
MO St Louis
BTI
111 W Port Plaza
314-878-8110
NJ Cherry Hill
BTI
900 Dudley Ave
609-662-1122
NJ Piscataway
BTI
225 Old New Brunswick Rd
201-457-0600
OH Cincinnati
BTI
8170 Corporate Park Dr
513-984-6442
TX Dallas
BTI
1341 W Mockingbird La
214-630-2431
VA Vienna
BTI
8150 Leesburg Pike
703-356-0670
WA Seattle
BTI
220 West Mercer
206-284-2355
ENGLAND
Birmingham
BTI
1433 Bristol Rd S
021-477-3846

Want even more information on products?
Turn to **UpDate Service Card, page 201.**

BUNKER RAMO CORP/INFO SYS DIV
35 Nutmeg Dr
Trumbull, CT 06609
203-377-4141
Contact: Edward Trapp
■ Products & Services
DDP systems
Local networks
Data entry terminals
Programmable terminals
Remote job entry terminals
Terminal controllers
Video data terminals (KSR)
Branch Sales Offices:
CA Los Angeles
Bunker Ramo Corp
1 Wilshire Bldg
213-623-3590
CA San Francisco
Bunker Ramo Corp
251 Post St
415-391-0255
CO Aurora
Bunker Ramo Corp
14291 E 4 Ave
303-344-2432
CT Hartford
Bunker Ramo Corp
630 Oakwood Ave
203-728-0335
GA Atlanta
Bunker Ramo Corp
5600 Roswell Rd NE
404-252-2004
IL Chicago
Bunker Ramp Corp
150 South Wacker Dr
312-782-4294
MA Newton Upper Falls
Bunker Ramo Corp
381 Elliot St
617-969-6888
MI Grosse Pointe
Bunker Ramo Corp
63 Kercheval Ave
313-964-0690
MO St Louis
Bunker Ramo Corp
1750 S Brentwood Blvd
314-961-5075
NY New York
Bunker Ramo Corp
77 Water St
212-248-3400
PA Pittsburgh
Bunker Ramo Corp
2987 Babcock BLvd
412-931-5800
PA Philadelphia
Bunker Ramo Corp
1405 Locust St
215-735-4845
TX Dallas
Bunker Ramo Corp
2997 LBJ Frwy
214-243-5511
VA Arlington
Bunker Ramo Corp
1500 Wilson Blvd
703-524-8700
WA Bellevue
Bunker Ramo Corp
1601 114th Ave SE
206-451-0285

BURROUGHS CORP
One Burroughs Place
Detroit, MI 48232
313-972-7000
Contact: Robert Lakin
■ Products & Services
Concentrators
Front-end processors
Message switchers
Remote network processors

Modems, voice-grade, high-speed (4,800-9,600 b/s)
DDP systems
Minicomputers
Mainframe computers
Database processors
Add-on main memory
Cartridges
Cartridge drives
Cassettes
Cassette drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Batch terminals
Data entry terminals
Facsimile terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
DDP systems software
Emulation packages
Local network software
Operating systems
Word processing packages
Power Distribution-Regulation
Uninterruptible power supplies, line correctors, etc
Educational services
Maintenance organizations

BYTEX CORP
29 Needham St
Newton, MA 02161
617-964-5505
Contact: Alan Greenfield
■ Products & Services
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic

C & L TERMINALS INC
1215 SE Ivon
Portland, OR 97202
503-231-0333
Contact: Cliff Liles
■ Products & Services
Acoustic couplers
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Disk drives, floppy
Disks, floppy
Portable data entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Cables, electrical prefabricated extending
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
CA Milpitas
C & L Terminals
1752 Houret Ct
408-263-9990
WA Bellevue
C & L Terminals Inc
13500 Bell-Red Rd
206-641-6820
WA Spokane
C & L Terminals Inc
W 81 Mission St
509-328-9912

C&W INCOTEL LTD
One Penn Plaza
New York, NY 10119
212-594-8340
Contact: John Phillips
■ Products & Services
Front-end processors
Message switchers
Multiplexers, group band
Minicomputers
Branch Sales Offices:
NY New York
C&W Incotel Ltd
One Penn Plaza
212-594-8340
ENGLAND
London
C&W Incotel Ltd
Mercury House
01-242-4433

CABLE & WIRELESS NY INC
420 Lexington Ave
New York, NY 10170
212-490-0610
Contact: Peter G Coslett
■ Products & Services
Facsimile-service carriers
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Value-added carriers
Message switchers

CABLEBUS SYSTEMS CORP
7869 SW Nimbus
Beaverton, OR 97005
503-643-3329
Contact: Barbara Senge
■ Products & Services
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Network management centers
Local networks
Interactive terminals
Terminal interfaces
Local network software
Computer/communications interfaces
Fire detection/protection equipment

CADO SYSTEMS CORP
2771 Toledo St
Torrance, CA 90503
213-320-9660
Contact: Joel D Leslie
■ Products & Services
Message switchers
Remote network processors
DDP systems
Minicomputers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Video data terminals (KSR)
Word processors, communicating
Computer/communications interfaces
Protocol converters

CAELUS MEMORIES INC
1015 Timothy Dr
San Jose, CA 95133
408-298-7080
Contact: James A Teresi
■ Products & Services
Cartridges
Cartridge drives
Disk packs
Branch Sales Offices:
MI Southfield
Caelus Memories Inc
25160 Lasher Rd
313-352-1040
NJ Clifton
Caelus Memories Inc
1033 Clifton Ave
201-777-4404
TX Dallas
Caelus Memories Inc
13733 N Central Exwy
214-231-2539

CAERE CORP
100 Cooper Ct
Los Gatos, CA 95030
408-395-7000
Contact: Bill Lavallie
■ Products & Services
Data entry terminals
Branch Sales Offices:
CA Los Angeles
Caere Corp
7330 N Figueroa Ave #108
213-256-4433
IL Lake Bluff
Caere Corp
141 Indian Rd
312-577-9224
LA Baton Rouge
Caere Corp
10076 Great Smoky
504-275-9350
NJ Toms River
Caere Corp
513 Main St
201-244-5100

CAL DATACOM
1844 Carnegie Ave
Santa Ana, CA 92705
800-854-0171
Contact: John Lorts
■ Products & Services
Acoustic couplers
Remote line printers
Remote job entry terminals
Teletypewriters
Video data terminals (RO)
Branch Sales Offices:
CA Los Angeles
11866 Wilshire Blvd
213-473-3565
CA San Mateo
1670 S Amphlett Blvd
415-572-4721
HI Hololulu
1320 Kalani St
808-847-6381

IL Oak Brook
2100 Clearwater Dr
312-789-2161
TX Houston
2525 North Loop West
713-880-2430
WA Seattle
155 N E 100th
206-522-6709

CAL DATA LEASE
2770 E Regal Park Dr
Anaheim, CA 92806
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Add-on main memory
Add-on auxilliary memory
Cartridge drives
Cassettes
Cassette drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Tape, paper
Tape punch/reader, paper
Data entry terminals
Graphic display terminals
Terminal controllers
Terminal interfaces
Operating systems

CALIFORNIA COMPUTER PRODUCTS INC
2411 W LaPalma Ave
Anaheim, CA 92801
714-821-2011
Contact: James Waltz
■ Products & Services
Digital plotters
Graphic display terminals
Interactive terminals
Applications packages
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
AZ Tempe
California Computer Products Inc
1414 W Broadway
602-894-9468
CA Orange
California Computer Products Inc
1717 Orangewood Ave
714-978-7111
CA San Francisco
California Computer Products Inc
1750 Montgomery St
415-392-4380
CA Santa Clara
California Computer Products Inc
3255 Scott Blvd
408-727-0936
CA Tarzana
California Computer Products Inc
5530 Corbin Ave
213-708-1093
CO Englewood
California Computer Products Inc
14 Inverness Dr E
303-770-1950
FL Altamonte Springs
California Computer Products Inc
303 E Semoran Blvd
305-331-4615
GA Norcross
California Computer Products Inc
150 Technology Park
404-448-4522
IL Schaumberg
California Computer Products Inc
949 N Plum Grove Rd
312-884-0300
KS Shawnee Mission
California Computer Products Inc
6811 West 63rd St
913-362-0707
LA Metairie
California Computer Products Inc
2121 N Causeway Blvd
504-833-5155
MA Waltham
California Computer Products Inc
470 Totten Pond Rd
617-890-0834
MI Southfield
California Computer Products Inc
17000 W Eight Mile Rd
313-569-3123
MN Bloomington
California Computer Products Inc
2950 Metro Dr
612-854-3448
MO St Louis
California Computer Products Inc
200 S Hanley Rd
314-863-2711
NJ Woodbridge
California Computer Products Inc
1000 Route 9 East
201-636-6500
NY Fairport
California Computer Products Inc
6780 Pittsford-Palmyra Rd
716-223-3820
NC Charlotte
California Computer Products Inc
4037 E Independence Blvd
704-535-7505
OH Cleveland
California Computer Products Inc
15887 Snow Rd
216-362-7280
OH Dayton
California Computer Products Inc
4977 Northcutt Pl
513-276-5247
OK Tulsa
California Computer Products Inc
9920 E 42 St
918-663-7392
OR Portland
California Computer Products Inc
5520 SW Macadam
503-241-0974
PA Wayne
California Computer Products Inc
999 Old Eagle School Rd
215-688-3405
PA Pittsburgh
California Computer Products Inc
Parkway Center
412-922-3430
TX Dallas
California Computer Products Inc
7540 LBJ Fwy
214-661-2326
TX Houston
California Computer Products Inc
9000 Southwest Frwy
713-776-3276
VA McLean
California Computer Products Inc
1487 Chain Bridge Rd
703-442-8404
WA Bellevue
California Computer Products Inc
1805-136th Pl NE
206-641-1925

ALBERTA, CANADA
Calgary
CalComp Canada
315 10 Ave SE
403-261-3720
ONTARIO, CANADA
Rexdale
CalComp Canada
55 Westmore Dr
416-745-9610
ONTARIO, CANADA
Ottawa
CalComp Canada
120 Hwy 15
613-820-8463
QUEBEC, CANADA
St Laurent
CalComp Canada
100 Alexis Nihon Blvd
514-744-6455
ARGENTINA
Buenos Aires
Electronica del Atlantico SRL
Sarmiento 1630
351201/359242
AUSTRALIA
Artarmon
Datamatic Pty Ltd
60/64 Dickson Ave
438-2699
AUSTRALIA
Melbourne
Australia Datamatic Pty Ltd
618 St Kilda Rd
51 6022
BOLIVIA
La Paz
Latindata Bolivia LTDA
Casilla 1811
323669/328786
BRAZIL
Sao Paulo
DataCal Equipamentos
Rau Barao do Trianfo 464-30
611552
BRAZIL
Rio de Janeiro
DataCal Equipamentos
Rau Mexico 111-s/304
221-1401
CHILE
Santiago
Latindata LTDA
Holanda 1310
42209/460205
COLOMBIA
Bogota
Procalculo SA
Carrera 7 #74-09
2350388/2350155
DENMARK
Copenhagen
BLT Agenturer A/S
G1 Koge Landevej 55
161-100
ECUADOR
Quito
Secor
Casilla A-4744
ENGLAND
Bracknell, Berks
CalComp Ltd
The Ring
50211
FINLAND
Helsinki
O Y Mercantile A R
Linnanrakentajantie 4
780322

FRANCE
Paris
CalComp SA
43 rue Breche-Aux-Loups
344-1507

GERMANY, WEST
Pinneberg
CalComp GmbH
Elmshorner Strasse 7-11
2 50 85

GERMANY, WEST
Munich
CalComp GmbH
Neusser Strasse 9
36 30 94

GERMANY, WEST
Dusseldorf
CalComp GmbH
Werfstrasse 37
501193

GERMANY, WEST
Offenbach
CalComp GmbH
Schumannstrasse 163
83 57 71

GREECE
Athens
Infodata Computer Sys Ltd
5 Koniari St
642-1368

HONG KONG
Hong Kong
Dataprep Ltd
Watsons Estate-N Point
5-717213

INDIA
Ahmedabad
Industrial Electronic Instr
30 NBK Society:Ellis Bridge
79-281

IRAN
Tehran
Multicorp Intl Service Co Ltd
PO Box 1212
831035

ISRAEL
Tel Aviv
Systronics Ltd
PO Box 39255
472040

ITALY
Milan
CalComp SpA
Palazzo A1F
8242001

ITALY
Bologna
CalComp SpA
Viale Masini, 20
051 352549/366900

ITALY
Rome
CalComp SpA
Via Thailandia, 27
06 5914905/5914405

JAPAN
Minato-ku-Tokyo
CalComp Pacific Inc
3-5-27 Roppongi
03-585-7101

JAPAN
Osaka
CalComp Pacific Inc
Daini Yuyama Bldg, 7th Floor
06/304/2012

JAPAN
Tokyo
Yoshizawa Business Machines K K
Konishi Bldg
03/501/6251

KOREA REP (REP)
Seoul
Oriental Computer Eng
CPO Box 289
265-7265

KUWAIT
Slamiyah
Diyar United Trading & Cont Co
Box 1571
524196/515636

LEBANON
Beirut
Comres
Aroati St
01/802972/802977

MALAYSIA FED OF
Kuala Lumpur
Dataprep Ltd
Jalan Ampang
488122

MEXICO
Mexico City
CalComp S A de C V
Plateros No 7-206
905-542-0914

NETHERLANDS
Amstelveen
CalComp BV
Maalderij 21
457-351

NORWAY
Oslo
Morgenstierne & Co A/S
Kongshellegate 3
356110

SAUDI ARABIA
Riyadh
Rola Trading Co
Box 3172
01/4654406/4650972

SINGAPORE
Singapore
Dataprep Pte Ltd
Marina House, Shenton Way
2211311

SOUTH AFRICA
Orange Grove
SACO Systems
Box 46348
29-1861

SPAIN
Alcorcon
Hispano Electronica SA
Apartado de Correos 48
6194108

SWEDEN
Stockholm
Primetek Data Systems A B
Englundauregen 7
08-27272

SWITZERLAND
Winkel bei Buelach
CalComp GmbH
Buelhofstrasse 360
8607935

TAIWAN
Taipei
Mighty Exim Corp
Box 58604
02 3943151

TURKEY
Cankaya-Ankara
Biltek Co Ltd
Farabi Sok 14/1-3
264729

VENEZUELA
Caracas
Coasin Computacion
Calle 9 con 4
388230

YUGOSLAVIA
Zagreb
Elektrotehna N Sol O
Rockefellerova 29
33631

CALIFORNIA INSTRUMENTS
DIV OF NORLIN INDUSTRIES
5150 Convoy St
San Diego, CA 92111
714-279-8620
Contact: Darrell Burrow
■ Products & Services
Electrical-parameters test equipment
Power Distribution-Regulation
Power supplies
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:

AL Mobile
Saber Assoc
800-327-8998

AZ Phoenix
Sigma Engineering Sales
602-997-1822

CA Los Altos
Jay Stone & Assoc
415-948-4563

CA Inglewood
Basic Systems Corp
213-673-4300

CA San Diego
Basic Systems Corp
714-268-8000

CO Denver
Westek Data Products Inc
303-989-1900

FL Pompano Beach
Saber Assoc
800-432-5618

FL Longwood
Saber Assoc
800-432-5618

FL Bradenton
Saber Assoc
800-432-5618

FL Riviera Beach
Saber Assoc
800-432-5618

GA Acworth
Saber Assoc
800-327-8998

IL Chicago
EIA
312-298-2290

IN Indianapolis
EIA
317-257-7231

KS Shawnee Mission
Midtec Assoc Inc
913-441-6565

LA Baton Rouge
SESCO-Baton Rouge
504-928-4951

MA Waltham
McBar Assoc
617-890-0233

MN Elk River
Prairie Assoc
612-441-6190

MO Florissant
Midtec Assoc Inc
314-837-5200

NJ Cedar Grove
KLS
201-785-4450

NJ Cherry Hill
Sci-Rep Inc
609-482-0059

NY Fayetteville
Martin P Andrews
315-637-3144

NC Clayton
Saber Assoc
800-327-8998

OH Dayton
Hocker Assoc
513-298-8638

OH North Olmsted
Hocker Assoc
216-734-4433

OK Tulsa
SESCO-Tulsa
918-622-3868

SC Columbia
Saber Assoc
800-327-8998

TX Houston
SESCO-Houston
713-999-3510

TX Dallas
SESCO-Dallas
214-231-9364

TX Austin
SESCO-Corp
512-892-2490

VA Fairfax
Sci-Rep Inc
703-385-0600

WA Seattle
Datacom
206-285-2525

CALIFORNIA MICROWAVE INC
990 Almanor Ave
Sunnyvale, CA 94086
408-732-4000
Contact: J H Smith
■ Products & Services
Earth stations
Error rate detectors
Technical control centers
Satellite delay compensation units
Branch Sales Offices:

CA Woodland Hills
California Microwave EDO
Box 2800
213-992-8000

MA N Andover
California Microwave
45 Turtle Ln
404-457-0059

MO St Louis
California Microwave
711 Old Ballas Rd
314-567-7091

NY Suffern
California Microwave
144 Route 59
914-368-0555

CALLAN DATA SYSTEMS
2637 Townsgate Rd
Westlake Village, CA 91361
Branch Sales Offices:

CA San Jose
Reptek
2444 Moorpark Ave
408-947-0622

CA San Diego
Western Scientific Marketing
5402 Ruffin Rd
714-565-6699

CO Lakewood
Westek Data Products
3360 S Wadsworth Blvd
303-989-1900

FL Casselberry
Pen-Tech
1398 Semoran Blvd
305-645-3444

FL Deerfield Branch
Pen-Tech
201 SE 15th Terrace
305-421-4989

GA Marietta
Pen-Tech
Cherokee Ctr
404-424-1931

IL Chicago
First Rep
9420 W Foster Ave
312-992-0830

IA Cedar Rapids
TRI
2510 White Eagle Tr
319-364-8650

MD Landover
Data Systems Marketing
8410 Corporate Dr
301-577-3700

MI Brighton
Lowry & Associates
8163 Grand River
313-227-7067

MN Eden Prairie
First Rep of Minn
6429 Flying Cloud Dr
612-944-2097

MO Earth City
TRI
502 Earth City Plaza
341-291-0001

NC High Point
Pen-Tech
1202 Eastchester Dr
919-883-9125

OH Dayton
Lowry & Assoc
2194 Hewitt Ave
513-435-7684

OK Tulsa
US Data
9820 E 41st St; Blaine Bldg
#115
918-252-9646

OR Tigard
Electronic Sources
10580 SW McDonald
503-684-0040

PA Pittsburg
Lowry & Assoc
7 Parkway Ctr
412-922-5110

PA Ambler
Denco Data
25 Skippack Pike
215-542-9876

TX Dallas
US Data
14241 Proton Rd
214-661-9633

TX Houston
US Data
4120 A Director Row
713-681-0200

UT Salt Lake City
Westek Data Products
176 North Redwood Dr
801-363-8113

WA Bellevue
Electronic Sources
1406 40th Pl NE
206-643-0400

WI Milwaukee
First Rep Co
9401 West Beloit Rd
414-546-2033

CAMBEX CORPORATION
360 Second Ave
Waltham, MA 02154
617-890-6000
Contact: George W Saupe
■ Products & Services
DDP systems
Mainframe computers
Add-on main memory
Add-on auxilliary memory
Maintenance organizations
Branch Sales Offices:

CA Lafayette
Cambex Corporation
1043 Stuart St
415-283-7155

GA Atlanta
Cambex Corporation
404-525-3895

IL Schiller Park
Cambex Corporation
4333 Transworld Rd
312-671-5260

MI Detroit
Cambex Corporation
313-961-3696

NJ Rochelle Park
Cambex Corporation
114 Essex St
201-368-0163

CANADIAN MARCONI
2442 Trenton Ave.
Montreal, Quebec, H3P 1Y9
Canada
514-341-7630
Contact: Paul Caden
■ Products & Services
International record carriers
Message (including telegraph) carriers
Value-added carriers
Message switchers

CANDELA ELECTRONICS
550 Del Rey Ave
Sunnyvale, CA 94086
408-738-3800
Contact: George Workman
■ Products & Services
Concentrators
Automatic answering units
Automatic calling units

CANOGA DATA SYSTEMS
6740 Eton Ave
Canoga Park, CA 91303
213-888-2003
Contact: George Fritkin
■ Products & Services
Multiplexers, time division
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group
(to 230.4 kb/s)
Modem eliminators
MIL 188C adapters
Parallel line extenders
Cables, lightwave (optical fiber)
Computer/communications interfaces
Branch Sales Offices:

AZ Scottsdale
BFA Corp
4426 N Saddlebag Trail
602-994-5400

CA Anaheim
Moxon Electronics
1970 S Santa Cruz St
714-635-7600

CA San Diego
Moxon Electronics
9580 Black Mountain Rd
714-578-5760

CA Santa Clara
Moxon Electronics
2376 Walsh Ave
408-727-6491

CA Lodi
Moxon Electronics
312 W Walnut Ave
209-369-1882

CO Denver
BFA Corp
12014 E 46 Ave Campus Six
303-371-2422

CT Stratford
Instruments Dynamics Inc
Foot of Board St
203-378-6019

IL Wheeling
Interbusiness
925 N Milwaukee
312-459-8866

MD Bethesda
Bekr Industries
4924 Hampden Ln
301-654-1434

MA Wakefield
Instruments Dynamics Inc
Lakeside Office Pk
617-245-5100

MI Ann Arbor
ARC Assoc
2500 Packard Ave #202
313-973-1133

MN Elk River
Prairie Assoc
16820 Highway 10
612-441-6190

NM Albuquerque
BFA Corp
3705 Westerfield NE
505-292-1212

NM Las Cruces
BFA Corp
532 E Amador
505-523-0601

NY Rochester
RG Engineering
3100 Monroe Ave
716-385-3021

NY Selkirk
RG Engineering
6 Sherbrook Dr
518-439-3070

OH Cleveland
ARC Assoc
21360 Center Ridge Rd
216-333-8375

OH Miamisburg
ARC Assoc
228 Byers Rd
513-859-3040

OK Oklahoma City
Data Marketing Assoc
2401 NW 39 Expwy
405-528-6071

PA Pittsburgh
ARC Assoc
160 N Craig St
412-681-8609

PA King of Prussia
J E Cuesta & Co
570 DeKalb
215-265-5800

TX Dallas
Data Marketing Assoc
14235 Proton Rd
214-661-0300

TX Houston
Data Marketing Assoc
3330 Bering Dr
713-780-2511

TX San Antonio
Data Marketing Assoc
833 Isom Rd
512-342-3031

TX Austin
Data Marketing Assoc
300 E Huntland Dr
512-451-5174

UT Salt Lake City
BFA Corp
395 Lawndale Dr
801-466-6522

WA Vancouver
Instrumentation/Control Systems Inc
Box 587
206-573-5600

WI Waukesha
Prairie Assoc
2913 Devonshire Ct
414-544-1141

BRITISH COLUMBIA, CANADA
Vancouver
Electronetic Systems Ltd
1033 Davie St
604-687-5696

ONTARIO, CANADA
Downsview
Electronetic Systems Ltd
62 Alness St
416-661-3673

ONTARIO, CANADA
Ottawa
Electronetic Systems Ltd
34 Bentley Ave
613-226-1232

QUEBEC, CANADA
Montreal
Electronetic Systems Ltd
ESSO Bldg; 3 Place Ville Marie
514-878-1168

JAPAN
Tokyo
Nissho Electronics Corporation
Konwa Bldg; 1-12-22 Tsukiji Chuo-Ku
(03) 544-8389

SWITZERLAND
Zurich
Kontron Electronic
Bernerstrasse Sud 169
01-62-82-82

CAPEX CORP
PO Box 13529
Phoenix, AZ 85002
602-264-7241
Contact: Kent Mueller

Branch Sales Offices:

AR Phoenix
Capex Arizona
4125 N 14 St
602-264-7241

CA Downey
Capex Calif
8221 E Third St
213-862-5102

CA San Francisco
Capex California
1750 Montgomery St
415-397-8140

GA Decatur
Capex Atlanta
5000 Snapfinger Woods Dr
404-987-3610

IL Hinsdale
Capex Illinois
15 Spinning Wheel
312-986-8618

MA Dedham
Capex Massachusetts
990 Washington St
617-329-6170

MO St Louis
Capex Missouri
Three Flag Center;1360 South Fifth St
314-946-3737

NJ Fair Lawn
Capex New Jersey
16-00 Route 208 South
201-797-2900

NY New York
Capex NY
1270 Roadway St
212-239-8840

PA King of Prussia
Capex Pennsylvania
801 Third Ave
215-337-8050

TX Dallas
Capex Texas
12200 Ford Rd
214-484-4260

VA Sterling
Capex DC
11 Park Ctr
703-930-0550

CAPITOL CIRCUITS CORP
24 Denby Rd
Allston, MA 02134
617-787-2030
Contact: Bruce R Mackie

CARDKEY SYSTEMS
20660 Bahama St
Chatsworth, CA 91311
213-998-7560
Contact: Mario Marinaccio
■ Products & Services
Data security devices: personal identification systems

CARROLL MANUFACTURING
1212 Hagan St
Champaign, IL 61820
217-351-1700
■ Products & Services
Data content monitors
Interactive terminals

CARTERFONE COMMUNICATIONS CORP
1111 W Mockingbird Lane;Suite 1400
Dallas, TX 75247
214-630-9700
Contact: Deadra Hill
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Cassette drives
Disk drives, floppy
Data entry terminals
Programmable terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)

Data access arrangement devices
Protocol converters
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
CA San Francisco
Carterfone Comm Corp
3505 Ryder St
408-245-9200
CA Garden Grove
Carterfone Comm Corp
12812 Garden Grove Blvd
714-534-2510
GA Norcross
Carterfone Comm Corp
6689 Peachtree Industrial Blvd
404-447-6785
IL Rolling Meadows
Carterfone Comm Corp
4300-I Lincoln
312-358-8703
MD Rockville
Carterfone Comm Corp
170 Rollins Av
301-770-6280
NY Fairfield
Carterfone Comm Corp
12 Spielman Rd
212-285-9181
PA King of Prussia
Carterfone Comm Corp
1000 W 9 Ave
215-337-3900
TX Dallas
Carterfone Comm Corp
2636 Walnut Hill Ln
214-350-1294
TX Houston
Carterfone Comm Corp
8000 Harwin Dr
713-780-0034

CENTER FOR COMMUNICATIONS MANAGEMENT
P.O. Box 324
Ramsey, NJ 07446
201-825-3311
Contact: June Duval
■ Products & Services
Applications packages

CENTER FOR COMPUTER LAW
Box 54308 T A
Los Angeles, CA 90054
213-623-3321
Contact: Michael D Scott
■ Products & Services
Educational services

CENTIGRAM CORP
155A Moffett Pk Dr
Sunnyvale, CA 94086
408-734-3222
Contact: Leonard Magnuson
■ Products & Services
Audio response units
Data entry terminals
Word recognition units
Data compression devices
Branch Sales Offices:
CA Mountain View
Data Systems and Communications Group
465 Fairchild Dr
415-966-8660
FL Orlando
COL-INS-CO Inc
1313 44th St
305-423-7615
IL Northbrook
Marketech
425 Huehl Dr
312-291-1220
MD Bethesda
Bartlett Associates
4405 East West Highway
301-656-3061
MA Framingham
Bartlett Associates
150 Speen St
617-879-7530
MI Madison Heights
WKM Associates
345 West Girard
313-588-2300
NV Pittsburgh
WKM Associates
90 Clairton Rd
NY White Plains
Bartlett Associates
470 Mamoronek Ave
914-949-6476
NY Holcomb
Bartlett Associates
County Rd 40 RD #3
716-657-6309
OH Dayton
WKM Associates
7913 S Suburban Rd
513-434-7500
OH Cleveland
WKM Associates
16141 Puritas Ave
216-267-0445
PA Wayne
Bartlett Associates
130 W Lancaster Ave
215-688-7325
VA Chesapeake
Bartlett Associates
3845 Ballahack Rd
804-421-7330
JAPAN
Tokyo
Takachiho Koheki Co Ltd
2, 1-Chome, Yotsuya Shinjuku-ku
03-355-1111

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

CENTRONICS DATA COMPUTER CORP
One Wall St
Hudson, NH 03051
603-883-0111
Contact: Warren Allen
■ Products & Services
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Ribbons and supplies for terminals and printers
Branch Sales Offices:
AZ Tempe
Centronics
1730 W 10 Place
602-968-7285
CA Irvine
Centronics
130 McCormick Av
714-979-6650
CA Sunnyvale
Centronics
550 Weddell Dr
408-744-1244
FL Ft Lauderdale
Centronics
1515 NW 167 St
305-620-1521
GA Atlanta
Centronics
3050 Presidential
404-455-8740
IL Arlington Heights
Centronics
738 W Algonguin Rd
312-956-0095
MD Columbia
Centronics
5565 Sterret Place
301-596-3914
MA Woburn
Centronics
200 W Cummings Pk
617-935-6150
NJ Mt Laurel
Centronics
137 Gaither Dr
609-234-8266
NY Plainview
Centronics
88 Sunnyside Blvd
516-349-1963
TX Arlington
Centronics
1900 E Randol Mill Rd
817-461-5711
TX Houston
Centronics
10200 Hempstead
713-688-1455
ONTARIO, CANADA
Mississauga
Hamilton Avnet Elect
3688 Nashua Dr
416-677-7432
ONTARIO, CANADA
Mississauga
Centronics
1225 Arrowood Dr
416-625-0770
ONTARIO, CANADA
Ottawa
Hamilton Avnet Elect
1735 Courtwood Cr
613-226-1700
QUEBEC, CANADA
Dorval
Centronics
765 Lajoie St
514-636-6451
QUEBEC, CANADA
St Laurent
Hamilton Avnet Elect
2670 Paulus St
514-331-6443
EIRE (IRELAND)
Droghed A
Centronics Ireland BV
Donore Rd
41-8991
ENGLAND
London
Centronics UK (Ltd)
Petersham House, Harrington Rd
01-581-1011
FRANCE
Paris
Centronics SA
50 Rue Dombasle
828-4051

GERMANY, WEST
Frankfurt
Centronics GmbH
Arabella Center; Lyoner Strasse 44-48
666-1021
ITALY
Milan
Centronics SpA
Via Santa Valeria S
809-516

CENTURY DATA SYSTEMS INC
A XEROX CO
1270 N Kraemer Blvd
Anaheim, CA 92806
714-632-7500
Contact: Charles Geiger
■ Products & Services
Disk drives, large
Branch Sales Offices:
CA Santa Clara
Century Data Systems Inc
3375 Scott Blvd
408-727-2833
FL Vero Beach
Century Data Systems Inc
2925 Cardinal Dr
305-231-5700
IL Schaumburg
Century Data Systems Inc
2020 Algoquin Rd
312-397-1007
MA Waltham
Century Data Systems Inc
255 Bear Hill Rd
617-890-1670
NJ Red Bank
Century Data Systems Inc
10 Mechanic St
201-741-1407
TX Dallas
Century Data Systems Inc
13773 N Central Expwy
214-699-1682
ENGLAND
Woking Surry G0215AP
Century Data Systems Ltd
20 The Broadway
04862-71991
GERMANY, WEST
6380 Badhamburg vdh
Century Data Systems
Hainigasse 13-15 Postfuch 1345
49-6172-26043

CERMETEK MICROELECTRONICS INC
1308 Borregas Ave
Sunnyvale, CA 94086
415-734-8150
Contact: Ken Archbold
■ Products & Services
Line drivers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Branch Sales Offices:
AZ Scottsdale
Dar-C
14425 N Scottsdale Rd
602-948-2240
CA Palo Alto
WITC
151 University Av
415-321-1240
CA San Jose
Quorum Technical Sales
1775-A Technology Dr
408-297-1640
CA Los Alamitos
Reed Electronic Marketing
5242 Katella Avenue #104
598-6676
CO Denver
D/Z Associates
70 West 6th Ave
303-534-3649
FL Altamonte Springs
Lawrence Associates Inc
711 Turnbull Ave
305-339-2828
IL Wheeling
Ed Joiner & Co
10985 Milwaukee Ave
312-520-1200
MA Needham
Spectrum Associates
109 Highland Ave
617-444-8600
MN Minneapolis
Jos Co/Melius
6425 Cedar Av
612-861-3343
NM Albuquerque
Syntech
302-C San Pablo SE
505-266-7951
NY Wantagh
Tri Tek Associates
3375 Park Ave
516-221-7600
OH Cleveland
Marlow Associates
3645 Warrensville Center Rd
216-991-6500
OR Tualatin
Crown Electronics Sales
18861 SW Martinnazzi Ave
503-638-7561
PA Glenside
Koebert Associates Inc
129 Roslyn Ave
215-887-2310
TX Houston
The Cunningham Co
9440 Old Katy Rd
713-683-7231
VA Lynchburg
Glenn White Associates Inc
Box 10186
804-384-6920
ONTARIO, CANADA
Mississauga
R N Longman Sales
1715 Meyerside Dr
416-677-8100

CHANNEL SYSTEMS INTERNATIONAL
4129 State St
Santa Barbara, CA 93110
805-967-2110
Contact: R R Ploger
■ Products & Services
Front-end processors
Packet processors
Remote network processors
DDP systems
Local network interfaces
Minicomputers
Mainframe computers
DDP systems software
Emulation packages
Local network software
Data communications consultants

CHATSWORTH DATA CORP
20710 Lassen
Chatsworth, CA 91311
213-341-9200
Contact: Frank J Lefkowitz
■ Products & Services
Remote job entry terminals
Branch Sales Offices:
CO Golden
J F Hurlbut
622 Gardenia
303-279-7796
MN Brooklyn Pk
Tele-Terminals
7216 Boone Ave
WA Seattle
Distributed Data Products
1200 Westlake Ave N
206-283-4044

CHESS
955 Bannock St
Denver, CO 80204
303-573-5135
Contact: Bob Willmann
■ Products & Services
Line sharing units
Message switchers
Modem sharing units
Multiplexers, frequency division
Multiplexers, statistical (intelligent)
Packet processors
Port selectors
Port sharing units
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Data content monitors
Error rate detectors
Protocol analyzers
Response-time monitors
Network management centers
Technical control centers
Cassette drives
Disk drives, floppy
Disk drives, large
Floppy disk recorders
Tape, paper
Tape punch/reader, paper
Bar code readers
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Automatic answering units
Automatic calling units
Code converters
Computer/communications interfaces
Data access arrangement devices
Furniture, cabinets, terminal enclosures
Power Distribution-Regulation
Protocol converters
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: automatic
Switches, data communications: manual

Uninterruptible power supplies, line correctors, etc
Data communications consultants
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
TX Dallas
Chess
13647 Omega
214-960-1604
TX Houston
Chess
7331 Harwin Dr
713-789-0803

CHICAGO DATA SYSTEMS INC
800 Enterprize Dr #111
Oak Brook, IL 60521
312-325-2960
Contact: Charles L Crabtree

CHI CORP
21111 Chagrin Blvd
Cleveland, OH 44122
216-991-9000
Contact: R B Spivak
■ Products & Services
Concentrators
Front-end processors
Inverse multiplexers
Packet processors
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Remote line printers
Teleprinters, impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)

CHROMATICS INC
2558 Mountain Industrial Blvd
Tucker, GA 30084
810-766-8099
Contact: Kenneth R Brown
Branch Sales Offices:
AL Huntsville
Col Ins Co
205-533-2370
CA Santa Monica
Chromatics Inc
213-452-5885
CO Littleton
Davis & Assoc
303-795-1400
FL Ft Lauderdale
Col Ins Co
800-432-4480
GA Atlanta
Col Ins Co
800-327-6600
IN Indianapolis
Dytec/Central Inc
317-247-1316
IA Iowa City
Dytec/Central Inc
319-683-2282
KS Lenexa
Dytec/South
913-888-0215
ME Framingham
Bartlett Assoc
617-879-7530
MD Bethesda
Bartlett Assoc
301-656-3061
MI Detroit
WKM Assoc
313-588-2300
MN Eden Prairie
Professional Mktg Corp
612-934-5939
MO Hazelwood
Dytec/South Inc
314-731-5400
NY White Plains
Bartlett Assoc
914-949-6476
NY Holcomb
Bartlett Assoc
716-657-6309
OH Cleveland
WKM Assoc
216-267-0445
OH Dayton
WKM Assoc
513-434-7500
PA Pittsburgh
WKM Assoc
412-892-2953
PA Wayne
Bartlett Assoc
215-688-7325
AUSTRALIA
Crows Nest NSW
TCG-439-6477
BELGIUM
Brussels
Spesi
02-37491-12
ENGLAND
Bournemouth
Techex Ltd
0202-293-115
FRANCE
Techdata
749-40-37
GERMANY, WEST
Techdata GmbH
31025-6
ISRAEL
Eldan Electronic Instrument Co Ltd
533-221-533-242
JAPAN
Computers Int'l Japan
03-402-856
SOUTH AFRICA
Pretoria
Infodata Pty Ltd
01278-8141
SWEDEN
Teleinstrument AB
08-380-370
SWITZERLAND
W Stolz AG
057-54655

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

CII-HONEYWELL BULL
94 Av, Gambetta; B.P. 33
75960 Paris Cedex 20,
France
33 360-02-22

CINCINATTI ELECTRONICS CORP
2630 Glendale/Milford Rd
Cincinatti, OH 45241
513-563-6000
Contact: D C Maxwell Jr
■ Products & Services
Digitized-voice processors
Line drivers
Microwave/laser systems
Infrared systems
Bar code readers
Data entry terminals
Programmable terminals
Interactive terminals
Terminal interfaces
Computer/communications interfaces
Data security devices: encoder/decoders
Data security devices: software security modules
Voice digitizers
Branch Sales Offices:
CA Redondo Beach
R M Wise
Box 7000-759
213-377-9872
GA Warner Robins
J A Howard
Drawer XX
912-922-1571
MA Bedford
R L Erwin Jr
3 Preston Ct
617-275-9080

CINCINNATI BELL
201 East 4th St
Cincinnati, OH 45202
513-397-3122
Contact: Charles Pettis
■ Products & Services
Telephone companies
Channel service units
Digital service units
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Disk drives, floppy
Disks, floppy
Audio response units
Bar code readers
Batch terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Automatic calling units
Computer/communications interfaces
Data jacks and plugs
Pulse and signal regenerators
Data communications consultants

CINCOM SYSTEMS INC
2300 Montana Av
Cincinnati, OH 45211
513-662-2300
Contact: Dennis Yablonsky
■ Products & Services
DDP systems
Applications packages
DDP systems software
Teleprocessing monitors
Educational services
Maintenance organizations
Branch Sales Offices:
CA Irvine
Cincom Systems
2151 Michelson Dr
714-955-0771

CO Denver
Cincom Systems
6825 E Tennessee Ave
303-388-2458
FL Coral Gables
Cincom Systems
5915 Ponce De Leon
305-665-0451
GA Decatur
Cincom Systems
4151 Memorial Dr
404-296-5045
IL Des Plaines
Cincom Systems
2200 E Devon
312-297-2280
KS Shawnee Mission
Cincom Systems
10000 W 75 St
913-384-4386
MA Braintree
Cincom Systems
222 Forbes Rd
617-848-7988
MI Southfield
Cincom Systems
17117 W 9 Mile Rd
313-559-5650
MI Grand Rapids
Cincom Systems
3040 Charlevoix Dr
616-942-0982
MO Earth City
Cincom Systems
514 Earth City Plaza
314-291-0400
NY New York
Cincom Systems
475 Park Ave South
212-685-8050
OH Cincinnati
Cincom Systems
2300 Montana Ave
513-662-2300
PA Pittsburgh
Cincom Systems
650 Smithfield St
412-232-3410
TX Dallas
Cincom Systems
6350 LBJ Frwy
214-661-0527
VA Fairfax
Cincom Systems
9495 Silver King Ct
703-591-1740
ONTARIO, CANADA
Mississauga
Cincom Systems
130 Dundas St E
416-279-4220
AUSTRALIA
Crows Nest
Cincom Systems
220 Pacific Hwy
02-436-1100
BELGIUM
Brussels
Cincom Systems
17-19 Rue Montoyer
32-02-511.65.48

C ITOH ELECTRONICS INC
5301 Beethoven St
Los Angeles, CA 90066
213-306-6700
Contact: Tak Shiozaki
■ Products & Services
Microcomputer/ microprocessor systems
Disk drives, floppy
Video data terminals (KSR)
Branch Sales Offices:
IL Addison
C Itoh Electronics Inc
240 East Lake St
312-941-1310
NY New York
C Itoh Electronics Inc
666 Third Ave
212-682-0420
TX Dallas
Itoh Electronics Inc
17060 Dallas Parkway 108
214-931-0177

CLARY CORP
320 W Clary Ave
San Gabriel, CA 91776
213-287-6111
Contact: Ed Kramer
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
OR Portland
Ingalls Assoc
3511 SE Milwaukee Ave
503-232-7487

COASTAL DATA PRODUCTS
7370 NW 36 Ave
Miami, FL 33147
305-696-6800
Contact: Bob Sevick
■ Products & Services
Badge readers
Data entry terminals
Programmable terminals
Remote job entry terminals
Branch Sales Offices:
CA Paramount
Datamation Inc
7625 Rosecrans Ave
213-634-3000
CA San Diego
Budget Computer Systems Inc
7283 Engineer Rd
714-560-7344
FL Sarasota
Automation Sciences
1090 S Tamiami Trail
813-366-2821
IL St Charles
Electronic Systems Sales
29 Highgate Ct
312-377-9361
NC Charlotte
GLS Inc
4715 Park Rd
704-527-5955
RI Cranston
Technical Aut Bus Sys
689 Atwood Ave
401-944-3681
TX Addison
Corp for Distributed Systems
15840 Addison Rd
214-934-8040
QUEBEC, CANADA
Montreal
Time Data Recorder
4034 Cote Vertu
COLOMBIA
Bogota
Coldatos Ltda
Calle 30 A No 6-22
COSTA RICA
San Jose
Control de Datos SA
Apartado Aereo 1519
ECUADOR
Guayaquil
Aserca
PP Gomez 122, Casilla #7461
ENGLAND
Berkshire
Kerridge Computer
Parkway, Newbury
ICELAND
Reykjavik
Heimilistaeki SF
Saetuni 8
MEXICO
Mexico
Hatzlaja SA
Leibnitz No 1, Piso 7
NORWAY
Oslo
Gallus-Plesner Industri A-S
Lorenvangen 21, Okern
PERU
Lima
Segres
Apartado Aereo 5591

COASTCOM
2312 Stanwell Dr
Concord, CA 94520
415-825-7500
Contact: D G Stewart
■ Products & Services
Channel service units
Digital service units
FM systems
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)

CODATA SYSTEMS CORP
285 N Wolfe Rd
Sunnyvale, CA 94086
408-735-1744
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Branch Sales Offices:
AL Marietta
Pen Tech Associates
3322 Memorial Pk Holiday Office Center
404-424-1931
AK Bothell
Data Systems Marketing
10412 Beardslee Blvd
206-487-3571
CA Inglewood
Basic Systems Corp
230 W Florence
213-673-4300
FL Maitland
Pen Tech Associates
111 South Maitland Ave
305-645-3444
FL Deerfield Beach
Pen Tech Associates
201 SE 15th Terrace
305-421-4989
GA Marietta
Pen Tech Associates
627 Cherokee St Cherokee Center
404-424-1931
NV Santa Clara
Basic Systems Corp
2359 De La Cruz
408-727-1800

NJ Malboro
Cook & Weil
1 Jackson Way
212-536-6599

NC High Point
Pen Tech Associates
1202 Eastchester Dr
919-883-9125

OH Cincinnati
Applied Data Management
10 Knollcrest Dr
513-821-9921

OR Hillsboro
Data Systems Marketing
910 NW Brookwood
503-640-4883

TX Austin
Cybernation
3103 Harris Park Ave
512-479-0931

VA McLean
Snider Engineering
6723 Whittier Ave
703-556-0720

CODEX CORPORATION
20 Cabot Blvd
Mansfield, MA 02048
617-364-2000
Advertising pages 83,95
Contact: Dennis Kirshy
■ Products & Services
Front-end processors
Line sharing units
Message switchers
Modem sharing units
Inverse multiplexers
Multiplexers, statistical (intelligent)
Multiplexers, group band
Packet processors
Port selectors
Port sharing units
Remote network processors
Digitized-voice processors
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
MIL 188C adapters
Data content monitors
Error rate detectors
Protocol analyzers
Network management centers
Technical control centers
Local network interfaces
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Terminal controllers
Video data terminals (KSR)
Word processors, communicating
Custom programs
DDP systems software
Emulation packages
Operating systems
Personal computer communications software
Teleprocessing monitors
Word processing packages
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data access arrangement devices
Data jacks and plugs
Data security devices: encoder/decoders
Protocol converters
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Voice digitizers
Data communications consultants
Used equipment
Branch Sales Offices:

AR Phoenix
Codex Corp
8902 N Central Ave
602-944-6940

CA Inglewood
Codex Corp
11222 La Cienega Blvd
213-641-9342

CA Burlingame
Codex Corp
500 Airport Blvd
415-342-9741

CA Sacramento
Codex Corp
1540 Riverpark Dr
916-924-3633

CA Woodland Hills
Codex Corp
20335 Ventura Blvd
213-992-4004

CA Tustin
Codex Corp
17291 Irvine Blvd
714-972-0191

CA San Diego
Codex Corp
5333 Mission Center Rd
714-296-6283

CO Arvada
Codex Corp
6475 Old Wadsworth Blvd
303-421-1843

CT Huntington
Codex Corp
731 B Bridgeport Ave
203-929-8429

CT Glastonbury
Codex Corp
124 Hebron Ave
203-633-4071

DC Washington
Codex Corp
1776 K St NW
202-862-1563

FL Orlando
Codex Corp
7200 Lake Ellenor Dr
305-351-5555

GA Atlanta
Codex Corp
10 Perimeter Way
404-952-9330

IL Schaumburg
Codex Corp
1014 E Algonquin Rd
312-576-2036

IN Indianapolis
Codex Corp
6525 E 82
317-842-7017

KS Shawnee Mission
Codex Corp
10000 W 75th
913-677-2002

LA Metrairie
Codex Corp
3349 Ridge Lake Dr
504-831-9933

MD Baltimore
Codex Corp
1001 Pine Heights Ave
301-644-1164

MA Dedham
Codex Corp
888 Washington St
617-329-2445

MI Southfield
Codex Corp
Northland Towers West 15565 Northland Dr
313-557-3990

MI Grand Rapids
Codex Corp
5260 36th St SE
616-957-0022

MN Minneapolis
Codex Corp
7400 Metro Blvd
612-835-7927

MO St Louis
Codex Corp
7700 Clayton Rd
314-781-1900

NJ Irvington
Codex Corp
50 Union Ave
201-373-6500

NJ Cherry Hill
Codex Corp
1408 Hillside Dr
609-428-7992

NY Saratoga Springs
Codex Corp
77 Van Dam St
518-587-0921

NY New York
Codex Corp
708 Third Ave
212-682-6914

NC Charlotte
Codex Corp
500 E Moorehead
704-376-1296

OH Cincinnati
Codex Corp
8087 Beechmont Ave
513-474-4411

OH Cleveland
Codex Corp
1503 Brookpark Rd
216-886-4444

OK Tulsa
Codex Corp
5001 E 68th St
918-494-0126

OR Tigard
Codex Corp
7185 SW Sandburg Rd
503-620-7276

PA Canonsburg
Codex Corp
Rt 1 Box 204 Brigish Rd
412-941-4235

TN Memphis
Codex Corp
1355 Lynnfield Rd
901-767-3010

TX Dallas
Codex Corp
13531 N Central Exwy Keystone South
214-690-5221

TX Austin
Codex Corp
2525 Wallingwood
512-327-6470

TX Houston
Codex Corp
2100 W Loop South
713-629-6910

UT Salt Lake
Codex Corp
1363 S State St
801-486-4837

WA Bellvue
Codex Corp
12835 Bel-Red Rd
206-453-0510

WI Wauwatosa
Codex Corp
10855 W Potter Rd
414-475-7533

ALBERTA, CANADA
Calgary, AL
ESE
1890 First Street NE
403-230-5386

ONTARIO, CANADA
Rexdale, Ontario
ESE Ltd
1780 Albion Rd
416-749-2271

ONTARIO, CANADA
Ottawa, Ont
ESE
428 Cooper St
613-236-7499

QUEBEC, CANADA
Montreal, Quebec
ESE Ltd
560 Henri Bourassa
514-331-5507

ARGENTINA
1092 Buenos Aires
Dynamic Systems S R L
Belgrano 430-6° D
34-5730

AUSTRALIA
Croydon, Victoria 3136
Datacraft Pty Ltd
Cnr Croydon & Lincoln Rds
03-725-5477

AUSTRALIA
North Sydney, NSW 2060
Datacraft Pty Ltd
168 Walker St
02-929-7033

AUSTRIA
Vienna
Schrack SAT
Rotenmuehlgasse 26
022-85-85-41

BELGIUM
Brussels
Codex Europe SA
158 Ave de Tervuren
02-762-2351

BRAZIL
Sao Paulo
Elebra SA
Av Bogaert 326-Vila Vermelha SP
011-272-4255

CHILE
Santiago
Controles y Senales Ltda
Santa Lucia 232, 6° Piso
391241, 36882

COLOMBIA
Bogota
Colcomp SA
Calle 93A No 13B-28
2578813, 2577616

DENMARK
Copenhagen
Aage Hempel ASA
Havengade 39
01-126767

ENGLAND
London
Codex UK Ltd
105/107 Lansdowne Rd Croydon
01-680-8507

FINLAND
Helsinki
Oy Hedengren ABA
Box 190
0-670-211

FRANCE
Paris
Datatel SA
23 Rue Beranger, Boulogne Billancourt
1-605-1200

GERMANY, WEST
Juechen
Codex W Germany
Meyerkamp 22
02181-48100

GERMANY, WEST
Nurnberg
Tekade Gelten & Guilleaume
Thurn und Taxis Str 10
01149-911-526-1

GREECE
Piraeus
Cherma Electronics SA
Electronics Bldg Bouboulina St 26
412-3471 411-3140

HONG KONG
Hong Kong
Datacraft HK
Room 1410, Hang Lung Ctre
5-769078

INDIA
Bombay
Motwane Private Ltd
127 Mahatma Gandhi Rd
273845

INDIA
New Delhi
Motwane Private Ltd
68 Janpath
322246, 322095

ISRAEL
Tel-Aviv
Motorola Israel Ltd
16 Kremenetsi St
03-338973

ITALY
Milano
Dataconsyst—CGS SPA
Via Fanin Ang Via Di Vittorio 55
20090 Segrate
02-2136551

ITALY
Rome
Dataconsyst—CGS SPA
Via L Spallanzani, 24
06-864008

JAPAN
Tokyo
Codex Far East
No 2 Ueno Bldg 1-10 Yotsuya Shinjuku-ku
03-355-0432

JAPAN
Tokyo 160
Takachiho Koheki Co
2-8, 1-Chome, Yotsuya Shinjuku-ku
03-355-1111

JAPAN
Osaka 530
Takachiho Koheki Co
2-4, Komatsubara-cho Kita-ku
06-313-0671

KOREA REP (REP)
Seoul 140
Korea Computer Center
8-61, Galwol-Dong Yongsan-ku
7938061

KUWAIT
Safat
National Computer Ser
West Tower, Souk Al Kabir Bldg Fahed Al Salem St
448230

LUXEMBOURG
GD Luxembourg
Sogel
Dernier Sol 1
494141

MEXICO
Mexico DF
Datatron SA
M Escobedo 396
905-531-33-67

NETHERLANDS
Amsterdam
Geveke Elektronics BV
Kabelweg 25
020-582-9111

NEW ZEALAND
Wellington
Datacraft Ltd
22 Waione St, Petone
687-102

NORWAY
Oslo
Nor Data Comm
Hedemarketsgt-15
2-688983

PERU
Lima 13
Digicomp SA
Av Republica De Panama 2197
727495, 727497

PORTUGAL
Lisbon
Etatronica Equipamentos Technicos, LDa
Rua Cidade de Bolama 3 R/C Dto
319980

SAUDI ARABIA
Riyadh
Cable & Wireless Saudi Arabia Ltd
Box 6196
4657092

SINGAPORE
Singapore
Associated Technical Services PTE Ltd ATS
Keppel House No 11 Keppel Rd
2211533

SOUTH AFRICA
Johannesburg
H Strelow & Co
105 Hampstead House 46 Biccard St Braamfontein
398134

SPAIN
Madrid
Iber Electronics SA
Calle de Almagro 1, 4 Izqda
01-4198464

SWEDEN
Stockholm
Svea Data Comm
Pyramidvaegen 7, Solna
8-835120
SWITZERLAND
Zurich
Philips AGA
Allmendstrasse 140
1-43.22.11
TAIWAN
Taipei
Tai I Trading Co
Worldwide House No 685,
Ming-Sheng E Road
02-772-6226
THAILAND
Bangkok
Universal Telecommunication LP
64 Pan Rd, Silcom
234-1812
TURKEY
Istanbul
Plastronik AS
Buyukdere Caddesi Lal Is Hani No
62 Kat 8
669183, 668496
VENEZUELA
Caracas
Contel CA
Av Andres Bello Edif Torre Fondo
Comun Carmelitas
573-8112, 573-8312

COGNITRONICS CORP
25 Crescent St
Stamford, CT 06906
203-327-5307
Contact: Matthew J Flanigan
■ Products & Services
Digitized-voice processors
Audio response units
Bar code readers
Data entry terminals
Voice digitizers
Branch Sales Offices:
CA Novato
Ed Driscoll
180 Montura Way
415-883-0353
FL Coral Springs
H A Inc
11471 W Sample Rd
305-752-7520
TX Dallas
The Thorson Co SW
4445 Alpha Rd
214-233-5744

COHERENT COMMUNICATIONS SYSTEMS CORP
60 Commerce Dr
Hauppauge, NY 11788
516-231-1550
Contact: Bertram J Ralph
■ Products & Services
Multiplexers, frequency division
Digitized-voice processors
Modems, voice-grade, low-speed
(0-1,200 b/s)
Modems, voice-grade, medium speed
(1,800-3,600 b/s)

COLORADO VIDEO INC
PO Box 928
Boulder, CO 80306
303-444-3972
Contact: Jim Dole
■ Products & Services
Data compression devices

COLUMBIA DATA PRODUCTS
8990 Route 108
Columbia, MD 21045
301-992-3400
Contact: Karl Yatovitz
■ Products & Services
Cartridge drives
Disk drives, floppy
Floppy disk recorders
Graphic display terminals
Interactive terminals
Word processors, communicating
Code converters
Branch Sales Offices:
AZ Phoenix
Peripherals Inc
6525 N 15 Ave
602-242-7800
CA Los Altos
Jay Stones & Assoc
339 S San Antonio Rd
415-948-4563
CO Denver
Computer Technology
6311 N Federal Blvd
303-427-8419
FL Orlando
Format Inc
2424 Timberlake Dr
305-851-8273
GA Atlanta
Teq Spec II
119 Administrative Blvd
404-455-7222
IL Clearwater
Teq Spec I
3118 Golf to Bay Blvd
813-725-2201
MA Southboro
Victor Electronics
304 Turnpike Rd
617-481-4010
MI Madison Heights
WKM Assoc Inc
345 W Girard
313-588-2300
MN Eden Prairie
Scientific Devices
7032 Wi-low Creek Rd
612-944-3515
MN Eden Prairie
Electronic Instrument
Consultants Inc
7772 Mitchell Rd
612-937-9701
NE Omaha
GRH Electronics
4520 S 36th St
402-734-4900
NY Rochester
Rotelcom Data Inc
67 Chestnut St
716-546-5060
OH Cleveland
WKM Assoc Inc
16141 Puritas Ave
216-267-0445
OH Dayton
WKM Assoc Inc
7913 S Suburban Rd
513-434-7500
PA Pittsburgh
WKM Assoc Inc
90 Clairton Blvd
412-892-2963
PA Huntingdon Valley
Lynbar
3741 Ridgeview Rd
215-947-3554
TX Dallas
Data Aids Assoc
2880 LBJ Frwy
214-620-1551
TX Houston
Data Aids Assoc
1440 N Loop
713-862-6685
WA Bellevue
DPM Inc
515 116 Ave
206-453-9082
ONTARIO, CANADA
Hamilton ON
Repron Scientific Instruments
42 James St North
416-529-1566
ONTARIO, CANADA
Ottawa ON
Cantec Representatives
1573 Laperriere Ave
613-725-3704
AUSTRALIA
New South Wales
Pacific Communications Ltd
4 Euston St-Rydalmere
02-638-6400
DENMARK
Bagsvaerd
CKI-DATA
Laurentsvej 28
02-98-44-11
ENGLAND
Bournemouth
Data-Type
Unit 23 Elliott Rd
FRANCE
Paris
Elexo
8 rue Saint Lucie
011-331-930-2880
GERMANY, WEST
Monchengladbach
Ziegler
An Der Waldesruh 17
011-49-2166-80091
SOUTH AFRICA
Johannesburg
KB Sales Co Ltd
Box 260195
011-21-8751
SWEDEN
Stockholm
Datametrix, AB
Box 106
SWITZERLAND
Zurich
Max Meier
Norastrasse 5
01-54-21-21

COMARK CORP
257 Crescent St
Waltham, MA 02154
617-894-7000
Contact: William Breen
■ Products & Services
Microcomputer/ microprocessor systems
Cartridge drives
Disk drives, floppy
Disk drives, large
Programmable terminals
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
CA Santa Ana
Comark Corp
1616 South Lyon
714-953-8333

IN Merrillville
Comtark Corp
1515 West 74th Ave
219-769-2497

MD Silver Spring
Source Assoc
10300 Naglee Rd
301-431-0587

MO Earth City
Technical Representatives Inc
502 Earth City Plaza Blvd
314-291-0001

TX Houston
Dyna Marketing
7707 Sunbonnet
713-937-0278

COMDATA CORP
7900 North Nagle
Morton Grove, IL 60053
312-470-9600
Contact: Philip Towle
■ Products & Services
Modem sharing units
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, statistical (intelligent)
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Cassettes
Cassette drives
Disk drives, floppy
Tape, paper
Tape punch/reader, paper
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Cables, electrical prefabricated extending
Computer/communications interfaces
Data access arrangement devices
Data jacks and plugs
Switches, data communications: manual
Data communications consultants

COMDESIGN INC
751 S Kellogg Ave
Goleta, CA 93117
805-964-9852
Advertising pages 32-33
Contact: Kenneth R Guy
■ Products & Services
Concentrators
Front-end processors
Multiplexers, statistical (intelligent)
Packet processors
Data communications consultants
Branch Sales Offices:

AZ Tempe
Qualtech
610 W Broadway #201
602-967-4655

AZ Phoenix
PLS Associates Inc
4001 N 31st Ave
602-279-1531

CA Los Angeles
Mark Assoc
8921 S Sepulveda
213-641-1840

CA San Jose
Telemark
826 N Winchester
408-246-9616

CA Redondo Beach
Group III Electronics
2615 Manhattan Beach Blvd
213-973-7844

CA Irvine
Group II Electronics
2691 Richter
714-546-6390

CA San Diego
Group II Electronics
7263 Engineer Rd
714-292-0525

CA Sunnyvale
Group II Electronics
542 Lakeside Dr
408-245-4392

CO Evergreen
Westek Data Prod
Box 1355
303-674-5255

CO Denver
PLS Associates Inc
7755 E Quincy
303-773-1218

CT Stratford
Instruments Dynamics
Foot of Broad St
203-378-6019

CT Soughbury
J J Wild of New England
Box 342
203-264-9494

IL Skokie
Mar-Con Assoc
4836 Main St
312-675-6450

MD Rockville
J-4 Systems
50 W Montgomery
301-424-4144

MD Gaithersburg
The Wright Company Inc
19104 Rhodes Way
301-840-1928

MA Needham
J J Wild of New England
163 Reservoir St
617-444-2366

MI Center Line
Dietrich & Assoc
7200 E 10 Mile Rd
313-754-6450

MO Grandview
Digital System Sales
4006 E 137th Ter
816-765-3337

NH Merrimack
J J Wild of New England
Box 574
603-424-4717

NJ Livingston
Star Technical Sales Co Inc
283 E Northfield Rd
201-992-7827

NM Albuquerque
Qualtech
130 Louisiana NE
505-255-6100

NM Albuquerque
PLS Associates Inc
4300H Silver Ave
505-255-2330

NY Plainview
TRAC Assoc
88 Sunnyside Blvd
516-349-7664

NY Ft Jefferson
Star Technical Sales Company Inc
109 Alben Dr
201-249-8864

NY Selkirk
R Modine Associates
6 Sherbrook Dr
518-439-6092

OH Cleveland
Dietrich & Assoc
1276 W Third St
216-781-1855

OH Dayton
Dietrich & Assoc
333 W First St
513-223-6042

OR Lebanon
DPM Inc
34893 Bond Rd
503-258-8203

PA Pittsburgh
Dietrich & Assoc
90 Clairton Blvd
412-892-2992

PA Ambler
Denco Data Equipment
25 Skippack Pk
215-542-9876

PA Harleysville
P B Lotz Associates
500 Main St
215-256-6588

TX Dallas
The Thorson Company
4445 Alpha Rd
214-233-5744

TX Houston
The Thorson Company
6633 Hillcroft
713-771-3504

TX Austin
The Thorson Company
300 E Huntland Dr
512-451-7527

UT Salt Lake City
PLS Associates Inc
2520 S State St
801-466-8729

WA Bellevue
DPM Inc
15935 N E 8th 104
206-747-3309

COMM-PRO ASSOC
638 14 St
Manhattan Beach, CA 90266
213-376-1344
Contact: S F Dubow
■ Products & Services
Code/protocol conversion programs
Emulation packages
Local network software
Transport software
Teleprocessing monitors
Data communications consultants
Branch Sales Offices:

CA Manhattan Beach
Comm-Pro Assoc
350 N Sepulveda Blvd
213-376-3694

COMMTEX INC
2411 Crofton La
Crofton, MD 21114
301-721-3666
Contact: Don Parker
■ Products & Services
Concentrators
Message switchers
Multiplexers, statistical (intelligent)
Remote network processors

Data content monitors
Protocol analyzers
Response-time monitors
Network management centers
DDP systems
Local networks
Microcomputer/ microprocessor systems
Terminal controllers
Computer/communications interfaces
Protocol converters

COMMUNICATION MACHINERY CORP
1226 Anacapa
Santa Barbara, CA 93101
805-963-9670
Contact: Larry Green
■ Products & Services
Front-end processors
Local network interfaces
Computer/communications interfaces

COMMUNICATIONS CABLE CO
281 Arthur Rd
Martinez, CA 94553
415-372-6444
Contact: Debbie Mitchell
■ Products & Services
Cables, electrical prefabricated extending

COMMUNICATIONS INTERFACE INC
PO Box 2320 Loop Sta
Minneapolis, MN 55402
507-663-0087
Contact: Judd Kirklin
■ Products & Services
Remote line printers
Teleprinters, impact
Terminal interfaces
Code/protocol conversion programs
Word processing packages
Protocol converters
Data communications consultants

COMMUNICATIONS SATELLITE CORP
950 L'Enfant Plaza SW
Washington, DC 20024
202-863-6224
Contact: George A Lawler
■ Products & Services
Satellite carriers

COMMUNICATIONS SOLUTION INC
10062 Miller Ave
Cupertino, CA 95014
408-241-0619
Contact: Stephen J Randesi
■ Products & Services
Code/protocol conversion programs
Custom programs
Emulation packages
Local network software
Educational services

COMPAL INC
8500 Wilshire Blvd
Beverly Hills, CA 90211
213-652-2263
Contact: Gary Becker
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Programmable terminals
Word processors, communicating
Applications packages
Personal computer communications software
Word processing packages
Furniture, cabinets, terminal enclosures
Ribbons and supplies for terminals and printers
Educational services
Maintenance organizations
Branch Sales Offices:
CA Woodland Hills
Compal
6300 Variel Ave
213-992-4425
CA San Diego
Compal
7878 Clairemont Mesa
714-565-2041
CA Berkeley
Berkeley Computer
1569 Solano Ave
415-526-5600

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

COMPANIA DOMINICANA DE TELEFONOS, C POR A
Abraham Lincoln Ave #1101
Santo Domingo,
Dominican Republic
809-567-2211
■ Products & Services
Telephone companies

COMPLETE COMPUTER SYSTEMS
159 Gibraltar Rd
Horsham, PA 19044
215-441-4200
Contact: Joseph A O'Donnell
■ Products & Services
DDP systems
Minicomputers
Cartridge drives
Tape punch/reader, paper
Video data terminals (KSR)
Video data terminals (RO)
Microfilm equipment, systems and services
Uninterruptible power supplies, line correctors, etc

COMPRE COMM INC
3200 Farber Dr
Champaign, IL 61820
217-352-2477
Advertising page 40
Contact: Dennis Noonan
■ Products & Services
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Cables, electrical prefabricated extending
Computer/communications interfaces
Branch Sales Offices:
AZ Phoenix
Peripherals Inc
6525 N 15th Ave
602-242-7800
CA Los Alamitos
CSS Telecommunications II
10915 Bloomfield
213-594-4574
CA Mountain View
Thorsen West
625 Ellis St
415-964-9300
CO Littleton
Dapec Inc
5575 S Sycamore
303-798-6538
CT Bethel
Gemini Data Comm
208 Greenwood Ave
203-748-5506
FL Boca Raton
Network Orange
608 Bridgewood Dr
305-392-7487
IL Arlington Hts
Dytec Central Inc
315 W University Dr
312-394-3380
IL Oak Brook
Compre Comm Inc
2625 Butterfield Rd
312-654-3318
IN Indianapolis
Dytec Central Inc
25 Beachway Dr
317-247-1316
MD Gaithersburg
Technical Sales Associates
19544 Clubhouse Rd
301-258-9790
MA Harvard
Harvard Data Equipment
Warren Ave
617-456-8037
MA Worcester
Walters Communications Inc
195 Lake Ave
617-754-5375
MI Southfield
Mecom Inc
29350 Southfield Rd
313-557-7888
MN Eden Prairie
Scientific Devices
7032 Willow Creek Rd
612-944-3515
MO St Louis
Atech
10270 Page
314-428-7447
NJ Hackensack
Technical Marketing Associates
31 Di Carolis Ct
201-646-9222
OH Rising Sun
Mecom Inc
7033 Sandusky Co
419-457-3231
OK Tulsa
Barry Sales
3035 E Skelly Dr
918-749-7775
PA Media
S & S Klinetics
9 West 3rd St
215-565-5388
PA Bethel Park
Mecom Inc
3609 S Park Rd
412-854-2773
TX Richardson
Barry Sales
709 Lingco Dr
214-234-0255
TX Houston
Barry Sales
6400 Westpark
714-784-5860
WA Seattle
Ben/Dav
3204 NE 123rd St
206-367-3437

WA Vancouver
Ben/Dav
2005 Broadway #12
206-696-3265
WI Waukesha
Prairie Associates
2913 Devonshire Ct
414-544-1141
QUEBEC, CANADA
St Lambert
Commetrics Limited
Box 278
514-672-4534

COMPRESSION LABS INC
2305 Bering Dr
San Jose, CA 95131
408-946-3060
Contact: Cloyd Marvin
■ Products & Services
Message switchers
Remote network processors
Parallel line extenders
Teleconferencing networks
Data compression devices
Data communications consultants
Branch Sales Offices:
CA San Jose
Compression Labs Inc
2305 Bering Dr
408-946-3060
NY NY
Compression Labs Inc
405 Lexington Ave
212-986-1835

COMPUMART
65 Bent St, Box 568
Cambridge, MA 02139
617-491-2700
■ Products & Services
Modem sharing units
Multiplexers, frequency division
Multiplexers, time division
Acoustic couplers
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Network management centers
Microcomputer/ microprocessor systems
Minicomputers
Cartridges
Cartridge drives
Cassettes
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Digital plotters
Graphic display terminals
Interactive terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Applications packages
Personal computer communications software
Word processing packages
Computer/communications interfaces
Paper for terminals
Power Distribution-Regulation
Ribbons and supplies for terminals and printers
Switches, data communications: manual
Lease and resale organizations
Maintenance organizations
Timesharing/service bureaus

COMPUMED SYSTEMS INC
11390 W Olympic Blvd
Los Angeles, CA 90064
213-478-4236
Contact: Bill Pique
■ Products & Services
Interactive terminals
Branch Sales Offices:
CA Mission Viejo
Jim Sharkey
24721 Venablo Ave
714-586-2051
NJ Fort Lee
Rob Pansy
1605 John St
201-461-5660
OH Lakewood
Rich Stupansky
17602 Lakewood Hts Bl
216-221-7474

COMPUSCAN INC
900 Huyler St
Teterboro, NJ 07608
201-288-6000
Contact: Peter F Polizzano
■ Products & Services
Front-end processors
DDP systems
Data entry terminals
Programmable terminals

COMPUTEK INC
63 Second Ave
Burlington, MA 01803
617-272-8100
Contact: Earl Beardsley
■ Products & Services
Data entry terminals
Graphic display terminals
Programmable terminals
Teleprinters, impact
Branch Sales Offices:
NJ Princeton
Computek Inc
Box C216
609-799-1111

COMPUTER AUTOMATION
COMMERCIAL SYSTEMS DIV
2181 DuPont Dr
Irvine, CA 92713
714-833-8830
Contact: Dick Comstock
■ Products & Services
DDP systems
Local networks
Minicomputers
Word processors, communicating
Emulation packages
Local network software
Branch Sales Offices:
CA Newport Beach
Clive Hermann
4030 Birch St
714-833-8830
CA Burlingame
Don Kaysser
1799 Old Bayshore Hgwy
415-692-1814
GA Atlanta
Jim McGee
6540 Powers Ferry Rd
404-953-3240
MI E Lansing
Roger Kerwin
1331 E Grand River
517-332-5150
MN Chicago
Paul Mayer
444 N Michigan Ave
312-222-1444
NJ Bloomfield
Deane Driscoll
1455 Broad St
201-893-0222
TX Dallas
Joe R Arnold
4255 LBJ Freeway
214-934-1875

COMPUTER AUTOMATION
NAKED MINI DIV
1865 Von Karman
Irvine, CA 92713
714-833-8830
Contact: Norm Bryga
■ Products & Services
Front-end processors
Minicomputers
Add-on main memory
Cartridge drives
Disk drives, large
Tape drives, magnetic
Tape punch/reader, paper
Programmable terminals
Interactive terminals
Teletypewriters
Video data terminals (KSR)
Code/protocol conversion programs
Emulation packages
Operating systems
Automatic calling units
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Power supplies
Branch Sales Offices:
CA Santa Ana
Computer Automation
59 Brookhollow Dr
714-546-9550
CA Santa Clara
Computer Automation
3218 Scott Blvd
408-727-6800
CA Irvine
Computer Automation Latin America & Far East
18651 Von Karman
714-833-8830
FL Lakeland
Computer Automation
1543 Lakeland Hills Blvd
813-682-8111
GA Atlanta
Computer Automation
3781 Northeast Epwy
404-455-1649
IL Bensenville
Computer Automation
1060 North Tower Ln
312-860-1810
IL Indianapolis
Computer Automation
6525 E 82nd St
317-842-9770
MA Waltham
Computer Automation
69 Hickory Dr
617-890-7190

MI Livonia
Computer Automation
13971 Farmington Rd
313-261-5170

NJ Bloomfield
Computer Automation
400 Broadacres Dr
201-338-8300

NC Greenboro
Computer Automation
2303 W Meadowview
919-294-5367

OH No Olmsted
Computer Automation
26777 Lorain Rd
216-777-8700

TX Dallas
Computer Automation
2474 Manana St
214-350-5681

TX Houston
Computer Automation
9100 Southwest Freeway
713-981-8859

WA Bellevue
Computer Automation
13333 NE Bellevue
206-455-9650

ONTARIO, CANADA
Toronto
Computer Automation
1 Scarsdale Rd
416-445-1635

ENGLAND
Rickmansworth; Hertfordshire
Computer Automation Ltd
Hertford House Maple Cross
851-922654

GERMANY, WEST
Frankfurt/Mai
Computer Automation GmbH
Bleichstrasse 60-62

COMPUTER COMMUNICATIONS INC
2610 Columbia St
Torrance, CA 90503
213-320-9101
Contact: R L Cole
■ Products & Services
Concentrators
Front-end processors
Message switchers
Packet processors
Local networks
Local network interfaces
Electronic mailboxes
Data entry terminals
Programmable terminals
Terminal controllers
Code/protocol conversion programs
Custom programs
Emulation packages
Local network software
Teleprocessing monitors
Code converters
Computer/communications interfaces
Protocol converters
Data communications consultants
Branch Sales Offices:

CA Torrance
Computer Communications Inc
2610 Columbia St
213-320-9101

CA San Jose
Computer Communications Inc
8210 Claret Ct
408-295-4060

CO Littleton
Computer Communications Inc
5873 S Prince St
303-794-6758

NJ Paramus
Computer Communications Inc
140 Route 17 North
201-262-1711

VA Alexandria
Computer Communications Inc
4600 Duke St
703-823-2777

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

COMPUTER DATACOM INC
17767 Mitchell
Irvine, CA 92714
714-540-6327
Contact: Neil Gleason
■ Products & Services
Multiplexers, statistical (intelligent)
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Disk packs
Tape, magnetic
Interactive terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Video data terminals (KSR)
Video data terminals (RO)
Cables, electrical prefabricated extending
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers

COMPUTER DEVICES INC
25 North Ave
Burlington, MA 01803
617-273-1550
Advertising page 128
Contact: William J Stranger
■ Products & Services
Minicomputers
Bar code readers
Batch terminals
Programmable terminals
Portable data entry terminals
Remote job entry terminals
Teleprinters, non-impact
Teletypewriters
Word processors, communicating
Branch Sales Offices:

AZ Phoenix
Computer Peripheral Sales
6819 N 21st Ave
602-278-5574

CA Cerritos
Computer Devices
12611 Hiddencreek Way
213-926-0841

CA Foster City
Computer Devices
1015 E Hillsdale Blvd
415-574-5561

CA Campbell
Sedillo Company Inc
125 East Sunnoaks Ave
408-374-5220

FL Tampa
Flex-Comm International
Box 23963
813-223-1989

GA Atlanta
Flex-Comm International
3379 Peachtree Rd
404-237-9242

HI Kailua
Gray Associates
1269 Maleko St
808-261-3751

IL Des Plaines
Computer Devices
2200 E Devon Ave
312-298-6320

MA Burlington
Computer Devices
25 North Avenue
617-273-1550

MA Wayland
Centennial Sales Company
73 Pelham Island Rd
617-358-5161

MI Southfield
Computer Devices
24333 Southfield Rd
313-557-4030

MN Chanhassen
Professional Marketing Services
7811 Great Plaines Blvd
612-934-5939

NJ Edison
Computer Devices
2 Kilmer Rd
201-572-4700

NM Albuquerque
CPS
2705 Pan American NE
505-344-4241

NY New York City
Computer Devices
Two Penn Plaza
212-695-3055

NY Clark Mills
KLM Associates Inc
46 Clinton St
315-853-6126

NY Pittsford
KLM Associates Inc
111 Marsh Rd
716-381-8350

NY N Syracuse
KLM Associates Inc
201 South Main St
315-458-6214

NC Hendersonville
Flex-Comm International Inc
Box 1551
704-693-0920

OH Aurora
Engineering Marketing Assoc
337 E Garfield Rd
216-562-6104

OR Beaverton
Datec Inc
8059 S W Cirrus Dr
503-641-6644

PA Blue Bell
Computer Devices
1770 Walton Rd
215-643-3215

PA Hatboro
QED Electronics Inc
300 N York Rd
215-674-9600

TX Dallas
Computer Devices
Two Brookriver Ctr
214-630-5815

TX Houston
Computer Devices
730 North Post Oak Rd
713-686-1245

VA Alexandria
Computer Devices
6121 Lincolnia Rd
703-941-0330
WA Seattle
Datec Inc
364 Upland Dr
206-575-1470
ONTARIO, CANADA
Toronto
Datamex Ltd
14 Leswyn Rd
416-787-1208
FRANCE
91000 Evry
Computer Devices
108 Place des Miroirs
6-0790077

COMPUTER DYNAMICS INC
10 E 39th St
NY, NY 10016
212-532-8850
Contact: Henry Miller
■ Products & Services
Code/protocol conversion programs
DDP systems software
Local network software
Teleprocessing monitors

COMPUTER EXTENSION SYSTEMS INC
17511 El Camino Real
Houston, TX 77058
713-488-8830
Contact: G L Wagner
■ Products & Services
Minicomputers
Furniture, cabinets, terminal enclosures

COMPUTERIZED RESTAURANT SYSTEMS, INC
5300 E La Palma
Anaheim, CA 92807
714-779-3131
Contact: Duane F Newton
■ Products & Services
Minicomputers
Cassettes
Data entry terminals
Programmable terminals
Point of sale terminals
Video data terminals (KSR)

COMPUTER-LINK CORP
40 Ray Ave
Burlington, MA 01803
617-272-7400
Contact: R Donald Blackburn
■ Products & Services
Cartridges
Disk packs
Tape, magnetic
Programmable terminals
Remote job entry terminals
Branch Sales Offices:
CA Long Beach
Computer-Link Corp
Box 3725
213-439-7446
CA Irvine
Computer-Link Corp
18195 E McDurmott
714-540-6423
GA Mariette
Computer-Link Corp
3410 Ranch Rd
404-971-1329
IL Mt Prospect
Computer-Link Corp
1400 Yarmouth Dr
312-577-7655
NJ Marlton
Computer-Link Corp
Box 702
609-953-0510
NY Lake Grove
Computer-Link Corp
Box 108
516-585-3745
TX Houston
Computer-Link Corp
6625 Rowan
713-270-8351
TX Dallas
Computer-Link Corp
2964 LBJ Frwy
214-484-5754
VA Woodbridge
Computer-Link Corp
Box 7
703-321-4130
ENGLAND
London
Computer-Link (UK)
38A Georgiana St
01-267-5195

COMPUTER POWER SYSTEMS CORP
Box 6240
Carson, CA 90749
213-515-6566
Contact: Robert M Miller
■ Products & Services
Cables, electrical prefabricated extending
Power Distribution-Regulation
Uninterruptible power supplies, line correctors, etc

COMPUTER PRINTERS INTERNATIONAL
340 E Middlefield Rd
Mountain View, CA 94043
415-969-6161
Contact: Michael J Long
■ Products & Services
Teleprinters
Teleprinters, non-impact

COMPUTER PROJECTS INC
Friendship Center
Greensboro, NC 27409
919-292-4820
Contact: Arnold F Selby
■ Products & Services
Front-end processors
Message switchers
Packet processors
Emulation packages
Word processing packages
Branch Sales Offices:
NJ Hoboken
Arnold F Selby
Marineview Plaza
201-656-1608

COMPUTER ROOMERS INC
1250 Majestry Dr
Dallas, TX 75247
214-357-4671
Contact: Terry Fick
■ Products & Services
Furniture, cabinets, terminal enclosures

COMPUTER SCIENCES CORP
650 N Sepulveda Blvd
El Segundo, CA 90245
213-615-0311
Contact: Vincent R Grillo Jr
■ Products & Services
DDP systems
Local networks
Database processors
Switches, data communications: automatic
Educational services
Maintenance organizations
Network simulation services
Timesharing/service bureaus
Branch Sales Offices:
CA San Francisco
Infonet Div
50 California St
415-433-4000
CA El Segundo
Data Services Grp Hdqrtrs
650 N Sepulveda Blvd
213-678-0311
CA El Segundo
Commercial Div Hdqrtrs
220 Continental Blvd
213-678-0311
CA Los Angeles
Business Services Div
6701 S Sepulveda Blvd
213-649-2660
CA Los Angeles
TACS Div
4515 Eagle Rock Blvd
213-258-8227
CA Los Angeles
CMS Industries Div
5550 Harbor St
213-685-7381
FL Coral Gables
Infonet Div
255 Alhambra Cir
305-442-1213
GA Atlanta
Infonet Div
1597 NE Expwy
404-696-1013
IL Oak Brook
Infonet Div
815 Commerce Dr
312-325-7000
MD Silver Spring
System Sciences Div
8728 Colesville Rd
301-589-1545
NJ Hackensack
Infonet Div
One University Plaza
201-487-6200
NJ Paramus
Paid Prescriptions
235 Frisch Ct
201-845-9000
VA Falls Church
Systems Group Hdqrtrs
6565 Arlington Blvd
703-533-8877
VA Arlington
Infonet Div
1616 N Fort Myer Dr
703-841-3500
VA Falls Church
Communications Networks
6565 Arlington Blvd
703-533-8877
QUEBEC, CANADA
Montreal
Computer Sciences Canada Ltd
Suite 367 Place du Canada
514-878-9811
BELGIUM
Brussels
Computer Sciences Europe
350/358 Ave Louise Box 1
02-640-2103

ENGLAND
London
Computer Sciences Europe
Heathcoat House 20 Savile Row
01-439-9935

COMPUTER SECURITY INSTITUTE
43 Boston Post Rd
Northboro, MA 01532
617-393-3663
Contact: Beverly A Straight
■ Products & Services
Educational services

COMPUTER SHARING SERVICES
7555 West Hampden Ave
Denver, CO 80231
303-695-1500
Contact: Don Klee
■ Products & Services
Timesharing/service bureaus
Branch Sales Offices:
AZ Phoenix
1100 E Missouri Ave
602-279-5028
CA Oakland
11 Embarcadero West
415-763-2315
CO Denver
655 Broadway
303-825-6581
GA Atlanta
3384 Peachtree Rd NE
404-237-3516
IL Chicago
Three Illinois Ctr 303 E Wacker Dr
312-938-9090
NJ Parsippany
Lincoln Ctr 299 Cherry Hill Rd
201-335-8668
NY New York
Old Pennsylvania Plaza
212-564-6426
VA Arlington
Rosslyn Ctr 1700 North Moore St
703-524-6761

COMPUTER SYSTEMS CONSULTANTS
225 Main St
Chelmsford, MA 01863
617-251-8561
Contact: Pierre Buchard
■ Products & Services
Minicomputers
Video data terminals (RO)
Word recognition units
Word processors, communicating
Custom programs
Emulation packages
Operating systems
Personal computer communications software
Word processing packages

COMPUTER TRANSCEIVER SYSTEMS INC
E-66 Midland Ave
Paramus, NJ 07652
201-261-6800
Contact: R R Menna
■ Products & Services
Data entry terminals
Graphic display terminals
Interactive terminals
Portable data entry terminals
Teleprinters, non-impact
Data access arrangement devices
Data security devices: encoder/decoders
Paper for terminals
Used equipment
Branch Sales Offices:
AL Huntsville
FM Associates
Box 1368
205-536-9990
AZ Phoenix
Southwest Peripherals Co Inc
2875 Sky Harbor Blvd
602-267-7536
CA San Jose
CTSI
2444 Morepark Ave
408-243-2874
CT Southbury
J J Wild Inc of New England
Box 342
203-264-9494
FL Orlando
F&M Assoc
Box 13705
305-851-5710
FL Jupiter
FM Associates
Box 996
305-746-2996
GA Atlanta
FM Associates
Box 9901
404-451-2293
HI Honolulu
Western Union of Hawaii
190 South King
808-523-1326
IL Chicago
H&H Sales
2007 N Sedgewick
312-871-8250
IN Indianapolis
H&H Sales
3232 Bluebell Lane
317-297-1876
LA New Orleans
General Electric Co-ICES
1115 De Aimas
504-367-6528
MD Silver Spring
Communications Products Inc
1110 Fidler Lane
301-589-2802
MA Needham
J J Wild
163 Resevoir St
617-444-2366
MI Madison Heights
WKM Associates Inc
345 West Girard
313-588-2300
MO St Johns
Mid-West Marketing
3606 Woodson
314-426-2500
NJ Paramus
CTSI
Box 15
201-261-6800
NY Tonawanda
General Electric Co-ICES
175 Mileno Rd
716-876-1200
NY Schenectady
General Electric Co-ICES
1 River Rd
518-385-0914
NC Ramseur
FM Associates
Box 156
919-824-2196
OH Cleveland
WKM Associates Inc
16141 Puritas Ave
216-267-0445
OH Dayton
WKM Associates Inc
7913 South Suburban Rd
513-434-7500
OK Tulsa
General Electric Co-ICES
11102 E 65th St
918-627-6072
PA Pittsburgh
WKM Assoc
90 Clairton Blvd
412-892-2953
TX Houston
General Electric Co-ICES
8800 Wallisville Rd
713-672-3575
TX Dallas
General Electric Co-ICES
2641 Andjon Dr
214-357-7341
UT Salt Lake City
Data Systems Marketing
1864 South State St
801-487-8281
VA Richmond
Communications Products Inc
12124 Gardengate Rd
804-774-4925
WA Bothell
Data Systems Marketing
10412 Beardslee Blvd
206-487-3571
WI Brookfield
Delta Communications Inc
14640 W Greenfield
414-784-3663

COMPUTROL CORP
15 Ethan Allen Highway
Ridgefield, CT 06877
203-544-9371
Contact: Garry Stephens
■ Products & Services
Multiplexers, time division
Modems, limited distance
Modems, multiport
Modems, broadband, super-group (to 230.4 kb/s)
Local network interfaces
Computer/communications interfaces
Data security devices: software security modules
Fire detection/protection equipment
Branch Sales Offices:
CA Santa Ana
Knott Engineering
1949 La Cuesta Dr
714-838-9289
IN Columbus
Eastern IA Miltronics
3809 Colonial Dr
812-376-6321
MA N Reading
Martindale Associates Inc
212 Main St
617-942-0514
NJ Livingston
Star Technical Sales
283 E Northfield Rd
201-992-7827
TX Dallas
Remtek Inc
13500 Midway Rd
214-387-2855
VA Vienna
Advanced Technology Associates
8150 Leesburg Pike
703-556-0500

WA Bellevue
Showalter Inst Inc
1521 130th Ave NE
206-455-4922
ONTARIO, CANADA
Toronto
Transduction Ltd
Box 167 Station M
416-625-1907
ENGLAND
Slough
Data Translation Ltd
430 Bath Rd
011-44(6286)314
GERMANY, WEST
AdenauerstraBe 9
Stemmer Elektronik
8031 Puchheim
089 80 60 61

COMSHARE INC
3001 S State St
Ann Arbor, MI 48106
313-994-4800
Contact: Donald J Walker
■ Products & Services
Timesharing/service bureaus
Branch Sales Offices:
CA Los Angeles
Comshare Inc
3325 Wilshire Blvd
213-387-1177
CA San Francisco
Comshare Inc
Spear St Tower 1, Market Plaza
415-777-2100
GA Atlanta
Comshare Inc
875 Johnson Ferry Rd NE
404-252-8911
IL Des Plaines
Comshare Inc
701 Lee St
312-298-9630
MA Wellesley
Comshare Inc
60 William St
617-235-3650
MI Southfield
Comshare Inc
17117 W Nine Mile Rd
313-559-1400
MN St Louis Pk
Comshare Inc
Shelard Tower
612-546-3556
MO Clayton
Comshare Inc
7777 Bonhomme
314-862-7212
NY New York
Comshare Inc
1114 Ave of the Americas
212-398-6800
NC Charlotte
Comshare Inc
1200 E Morehead St
704-373-0900
OH Cincinnati
Comshare Inc
Fifth and Race Tower
513-421-5020
OH Cleveland
Comshare Inc
1300 East Ninth St
216-687-0460
PA Bala-Cynwyd
Comshare Inc
111 Presidential Blvd
215-835-6644
PA Philadelphia
Comshare Inc
1700 Market St
215-564-3404
PA Pittsburgh
Comshare Inc
Five Gateway Center
412-355-0540
TX Bellaire
Comshare Inc
656 W Loop South
713-667-2727
TX Dallas
Comshare Inc
4099 McEwen
214-387-0171
VA Arlington
Comshare Inc
1745 Jefferson Davis Hwy
703-979-0990
ONTARIO, CANADA
Rexdale
Comshare Inc
230 Galaxy Blvd
416-675-6363
BELGIUM
Brussels
Comshare Inc
Tweekerkenstraat;7 Rue des Deux Eglises
02 230-85-45
ENGLAND
London
Comshare Inc
32-34 Great Peter St
01-222-5665
GERMANY, WEST
Cologne
Comshare Inc
Quatermarkt 5
0221-210897
JAPAN
Tokyo
Comshare Inc
5-4-14 Tsukiji Chuo-Ku
03-542-8681
NETHERLANDS
The Hague
Comshare Inc
Koninginnegracht 56;2514 AE

COM-SWITCH TELECOMMUNICATIONS PROCESSING CORP
211 E 43 St
New York, NY 10017
212-697-2306
Contact: Joseph A Hewitt Sr
■ Products & Services
International record carriers
Message (including telegraph) carriers
Specialized carriers
Value-added carriers
Branch Sales Offices:
CA San Francisco
Com-Switch Telecommunications Processing Corp
1 Market Plaza;44 Stewart St
415-541-0505

COMTAL CORP
505 W Woodbury Rd
Pasadena, Altadena 91101
213-797-1175
Contact: Rodney Pollum
■ Products & Services
DDP systems
Database processors
Graphic display terminals
Programmable terminals
Computer/communications interfaces
Branch Sales Offices:
AZ Phoenix
Peripherals Inc
6252 N 15th Ave
602-242-7800
CA Westlake Village
Pacific Computer Mktg
32129 Lindero Canyon Rd
213-889-2532
CA San Francisco
Philip H Reagan
22 Carson st
CA Los Angeles
Marubeni Corp
624 South Grand Ave
213-972-2627
CO Littleton
Davis Associates
709 Littleton Blvd
FL Port St Lucie
Remtek South East Inc
728 Degan Dr
305-878-9379
FL St Petersburg
Southern Engineering Assoc
9700 Kroger Blvd
813-577-7700
IL Park Ridge
Ad-Tech Inc
701 S Lincoln Ave
312-692-7320
MD Rockville
TeLFree Associates
414 Hungerford Dr
301-340-7337
MA Stoughton
American Data Systems Mktg
53 Elderwood Dr
MN St Paul
James W Wills & Assoc
2003 Oakcrest Dr
612-739-5149
MO Grandview
Digital Systems Sales Inc
4006 East 137th Terrace
NJ Upper Montclair
Computer Marketing Inc
530 Valley Rd
201-746-8668
NJ Red Bank
Pat Associates
Box 762
201-542-8614
OH Chagrin Falls
W C Koepf Associates Inc
Box 16 68 Olive St
TX El Paso
D B M Associates
6006 N Mesa
915-584-1795
AUSTRALIA
Adelaide
Quentron Pty Ltd
GPO Box 2212
08-223-6224
FINLAND
02001 Espoo 20
Graphic Consulting Systems Oy
PL 67
90-463-460, 465-923
FRANCE
92606 Asnieres
Metrologie
La Tour d'Asnieres 4 Ave Laurent Cely
1-791-44-44

GERMANY, WEST
5000 Koeln Cologne 90
Rohde & Schwarz Engineering & Sales GMBH
Graf-Zeppelin—Str 18
02203-491

INDIA
Bombay 400021
Hinditron Computers Ltd
504 Raheja Chambers; 213 Nariman Point
24-42-38

COMTECH DATA CORP
613 S Rockford Dr
Tempe, AZ 85281
602-968-2433
Advertising page 62
Contact: J L Bufener
■ Products & Services
Earth stations
Microwave/laser systems
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)

COM/TECH SYSTEMS
505 Eighth Ave
New York, NY 10018
212-594-5377
Contact: Carl M Mengani
Microwave/laser systems
Modems, limited distance
Modem eliminators
Error rate detectors
RTS emulator
Data security devices: encoder/decoders
Data communications consultants
Branch Sales Offices:
CA Santa Ana
Knott Engineering
1949 La Cuesta Dr
714-838-9289
MI Gaithersburg
The Wright Co
19104 Rhodes Way
301-840-1928
MN Minneapolis
Deerland Dist
2021 E Hennepin Ave
612-331-6433
NJ Harrington Pk
Glasgal Comm Serv
103 First St
201-768-8082
NY New York
Glasgal Comm Serv
521 Fifth Ave
212-687-2455
NY Hauppauge
Datadyne Corp
185 Oser Ave
516-231-7741
PA Coopersburg
Pleasant Valley Assoc
RD1 Box 405
215-346-8684
ONTARIO, CANADA
Ottawa
Louis Albert Assoc
2264 Stevenage Dr
613-737-5941

COMTEC INFORMATION SYSTEMS INC
53 John St
Cumberland, RI 02864
401-724-8500
Contact: Glenn F Bowgren
■ Products & Services
Bar code readers
Batch terminals
Data entry terminals
Programmable terminals
Data access arrangement devices
Branch Sales Offices:
MA Newton Highlands
Butler Assoc
82 Winchester St
617-965-1080
NJ Sterling
Bristol Data Products Corp
1390 Valley Rd
201-647-2362
PA Dresher
J Fishman & Assoc
1645 Dublin Rd
215-646-3666

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

COMTEK INC
4216 McCullough
San Antonio, TX 78212
512-828-0908
Contact: William Sang
■ Products & Services
DDP systems
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Database processors
Add-on main memory
Disk drives, floppy
Disks, floppy
Disk drives, large
Floppy disk recorders
Tape drives, magnetic
Badge readers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Applications packages
Custom programs
DDP systems software
Emulation packages
Local network software
Transport software
Access program
Operating systems
Word processing packages
Automatic answering units
Automatic calling units
Data access arrangement devices
Data compression devices
Protocoi converters
Data communications consultants
Maintenance organizations
Network simulation services
Timesharing/service bureaus
Used equipment

CONCORD CONSULTING GROUP
191 Sudbury Rd Box 190
Concord, MA 01742
617-369-8744
Contact: Michael J Lydon
■ Products & Services
Data communications consultants

CONCORD DATA SYSTEMS
442 Marrett Rd
Lexington, MA 02173
617-863-1472
Contact: G Muckle
■ Products & Services
Multiplexers, group band
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Local network interfaces
Local network software

CONNECTAIR CO
50-37th St NE
Auburn, WA 98002
206-939-4880
Contact: Jerry R Bryant
■ Products & Services
EIA cable testers
Cables, electrical prefabricated extending
Cables, lightwave (optical fiber)
Switches, data communications: automatic

CONRAC CORP
DATA PRODUCTS DEPT
600 N Rimsdale
Covina, CA 91722
213-966-3511
Contact: John McClimont
■ Products & Services
Graphic display terminals
Branch Sales Offices:
CA Covina
Conrac Div
600 N Rimsdale
213-966-3511

GERMANY, WEST
Weikersheim
Conrac GmbH
Industriestrasse 18
07934-675

CONSOLIDATED COMPUTER INTERNATIONAL INC
1777 West Camelback Ave
Phoenix, AZ 85015
602-274-1966
Contact: E Ewen
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Minicomputers
Database processors
Programmable terminals
Interactive terminals
Remote job entry terminals
Applications packages
DDP systems software
Branch Sales Offices:
CA San Francisco
D Kimble
2001 Union St;9 Valley Forge Executive Mall
415-921-6104
PA Wayne
R Brown
580 E Swedesford Rd
215-687-6631
ONTARIO, CANADA
Willodale
D Baycroft
410 Consumers Rd
416-498-9780

CONTINENTAL POWER SYSTEMS INC
One Landmark Sq
Stamford, CT 06901
203-964-6430
Contact: Bradley S Walter
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AL Homewood
C S Philips
1816D 28th Ave S
205-870-0640
AZ Scottsdale
R M H Assoc
Box 520
602-949-0121
AR Little Rock
Environmental Enterprises Inc
423 N University Ave
501-664-3983
CA Los Angeles
Sweinhart El Co Inc
2900 E Olympia Blvd
213-264-1521
CA Sacramento
Westates Equipment Company
8670 23rd Ave
916-381-2552
CO Englewood
Data Specialties
3602 South Jason
303-761-5763
FL Orlando
Data Rep Inc
3450 Rio Vista Ave
305-843-5224
GA Atlanta
United Engineering
880 Johnson Ferry Rd
404-625-1515
IL Elk Grove Village
Kramer Datapower Inc
1108A Devon Ave
312-894-0550
KS Lenexa
C & C Sales
10012 Darnell
913-888-6200
LA Chalmette
Power Products Corp
Box 1249
504-277-3938
MA Sharon
Adcour Inc
Box 277
617-784-8123
MI Redford
State Wide Assoc
26847 Grand River Ave
313-537-2634
MN Eden Prairie
Computer Room Remodeling & Construction
7525 Mitchell Rd
612-934-5073
NE Omaha
D E Mc Culley Co
1903 Jones St
402-346-6373
NJ Morris Plains
R & J Control Power
14 Friar Rd
201-540-0625
NY Uniondale
Designed Power Systems Inc
783 Henry St
516-292-0075
NY Rochester
R G Engineering
3000 Winton Rd S
716-442-5631
OH Cleveland
Miller Curtis Assoc
7401 Exchange St
216-447-0040
OK Oklahoma City
Smith Lighting Sales Inc
4307 N Walnut
405-521-1163
PA Mars
Woodhyrst Inc
R R 1, Box 30
412-625-1515
PA Valley Forge
J E Cuesta & Co Inc
Box 188
215-265-5800
TX Dallas
Computer Environment
PO Box 10816
214-744-5533
TX Houston
Charles Metcalfe & Assoc
2855 Mangum
713-686-6106
UT Salt Lake City
Trembly Associates
1341 S State St
801-486-5292
VA Richmond
Data Power Environment
5407 Lakeside Ave
804-264-2528
WA Seattle
R W Campbell
1314 Valley St
206-622-3403
ONTARIO, CANADA
Mississauga
Datasphere Sales Ltd
1021 Rangeview Rd
416-278-5501

CONTINENTAL RESOURCES INC
175 Middlesex Turnpike
Bedford, MA 01730
617-275-0850
Contact: James F McCann Jr
■ Products & Services
Multiplexers, statistical (intelligent)
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Data content monitors
Cassettes
Disk drives, floppy
Disks, floppy
Disk drives, large
Tape punch/reader, paper
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Automatic answering units
Cables, electrical prefabricated extending
Computer/communications interfaces
Data access arrangement devices
Data jacks and plugs
Error controllers
Furniture, cabinets, terminal enclosures
Paper for terminals
Protocol converters
Branch Sales Offices:
CA Santa Clara
Continental Resources
2344 Walsh Ave
408-249-9870
CA Carson
Continental Resources
1134 Dominguez St
213-638-0454
IL Bensenville
Continental Resources
1090 Tower Ln
312-860-5991
MD Gaithersburg
Continental Resources
16021 Industrial Dr
301-948-4310
MA Bedford
Continental Resources
175 Middlesex Tpke
617-275-0850
NJ Scotch Plains
Continental Resources
847 Jerusalem Rd
201-654-6900
NJ Moorestown
Continental Resources
304 Harper Dr
609-234-5100
NY New York
Continental Resources
One Penn Plaza
212-695-3206

CONTROL CONCEPTS
DIV OF PRESEARCH INC
2361 S Jefferson Davis Hwy
Arlington, VA 22202
703-553-2911
Contact: M L Gollobin
■ Products & Services
Modem sharing units
Acoustic couplers
Modem eliminators
Data entry terminals
Remote job entry terminals
Video data terminals (KSR)
Cables, electrical prefabricated extending
Branch Sales Offices:
CA San Diego
Control Concepts
225 Broadway
714-235-8101
PA Huntingdon
Lynbar Group Inc
Box 278
215-947-3554

CONTROL DATA CORP
Box O, HQN111
Minneapolis, MN 55440
612-853-7600
Contact: S L Rickelman
■ Products & Services
Front-end processors
DDP systems
Local networks
Database processors
Cartridges

Cartridge drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Batch terminals
Graphic display terminals
Remote line printers
Video data terminals (KSR)
Ribbons and supplies for terminals and printers
Data communications consultants
Educational services
Maintenance organizations
Timesharing/service bureaus

CONTROL LASER CORP
11222 Astronaut Blvd
Orlando, FL 32809
305-851-2540
Contact: J J Fitzgerald
■ Products & Services
Microwave/laser systems
Data security devices: personal identification systems
Branch Sales Offices:
CA Emeryville
Northwest Pacific Region
1475 Powell St
415-654-1465
CA Oceanside
Southwest Pacific Region
PO Box G
714-724-7543
FL Orlando
Southeast Region
11222 Astronaut Blvd
305-851-2540
MI Royal Oak
Anderson & Hildebrand
2608 N Woodward
313-576-0450
NJ Edison
Enmark Associates
14 Irene Court
201-754-5115
NJ River Edge
Enmark Associates
657 Bogert Rd
201-967-1800
OH Dayton
Production Engineering Sales Co
4940 Profit Way
513-278-4741

CONVERGENT TECHNOLOGIES
2500 Augustine Dr
Santa Clara, CA 95051
408-727-8830
Contact: P Alker
■ Products & Services
DDP systems
Local networks
Minicomputers
Branch Sales Offices:
CA Anaheim
Conversent Technologies
1440 S State College
714-956-4751
MA Waltham
Conversent Technologies
303 Wyman St
617-890-5621
NY Great Neck
Conversent Technologies
505 Northern Blvd
516-482-0470

CORNING GLASS WORKS
TELECOMMUNICATIONS PROD DEPT
Baron Steuban Pl
Corning, NY 14831
607-974-4411
Contact: T E Dunne
■ Products & Services
Lightwave (fiber optic) systems

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

CORVUS SYSTEMS
2029 O'Toole
San Jose, CA 95131
408-946-7700
Contact: H Longstreth
■ Products & Services
Local networks
Add-on auxilliary memory
Disk drives, large
Disk packs

COSTRONICS ELECTRONIC
13 Pield Heath Ave
Hillington, Middlesex, UB8 3PB
United Kingdom
0895-38791
Contact: Richard Monkhouse
■ Products & Services
Graphic display terminals
Voice adapters
Educational services

S H COUCH CO
225 Patterson St
Tecumseh, MI 49286
517-423-7466
Contact: David J Manning
■ Products & Services
Fire detection/protection equipment

CPT CORP
8100 Mitchell Rd
Eden Prairie, MN 55344
612-937-8000
Contact: Robert Gallagher
■ Products & Services
Word processors, communicating

CRAIG DATA CABLE CO, INC
652 Glenbrook Rd
Stamford, CT 06906
800-243-5760
Contact: George Lutz
■ Products & Services
Line sharing units
Modem sharing units
Port selectors
Port sharing units
EIA cable testers
Cables, electrical prefabricated extending
Computer/communications interfaces

CRC SYSTEMS INC
4020 Williamsburg Ct
Fairfax, VA 22032
703-385-0440
Contact: Lynn Jackson
■ Products & Services
Teleprocessing monitors
Data communications consultants
Educational services
Network simulation services

CREARE INC
Great Hollow Road Box 71
Hanover, NH 03755
603-643-3800
Contact: Clifford Cary
■ Products & Services
Applications packages
Code/protocol conversion programs
Custom programs
Emulation packages
Operating systems

CROMEMCO INC
280 Bernardo Ave
Mountain View, CAAA 94043
415-964-7400
Contact: Dennis Leonard
■ Products & Services
Microcomputer/ microprocessor systems
Add-on main memory
Tape drives, magnetic
Emulation packages
Personal computer communications software
Word processing packages

CSPI
40 Linnell Circle
Billerica, MA 01821
617-272-6020
Contact: E Arsenalt
■ Products & Services
Front-end processors
Digitized-voice processors
DDP systems
Minicomputers
Branch Sales Offices:
AZ Scottsdale
Mar-Tech Assoc
8702 E Rancho Vista Dr
602-994-1285
CA Redondo Beach
Pacific Computer Marketing
Box 700-453
213-519-0679
CA W Lake Village
Pacific Computer Marketing
32129 Lindero Canyon Rd
213-889-2532
CA LeMesa
CSPInc
8380 Hercules St
714-464-1692
CO Littleton
DAPEC
5575 S Sycamore
303-798-6538
FL Stuart
Remtek/Southeast
951 Colorado Ave
305-287-8440
FL Atlanta
GA¢ Remtek Inc
18 Perimeter Pk
404-455-4705
IL Chicago
Pivan Eng Co
3535 Peterson Ave
312-539-4838
IN Indianapolis
Pivan Eng Co
1259 W 86 St
317-253-1681
IA Cedar Rapids
Pivan Eng Co
204 Collins Rd NE
319-377-4434
KS Shawnee Mission
Pivan Eng Co
5920 Nall
913-722-1030

MD Silverspring
CSPInc
8757 Georgia Ave
301-587-6860
MA Billerica
CSPInc
40 Linnell Circle
617-272-6020
MI Southfield
COMTEL Instruments Co
21223 Hillstop
313-358-2505
MN Minneapolis
Pivan Eng Co
5100 Edina Industrial Blvd
612-835-3060
MO St Louis
Pivan Eng Co
11734 Lackland Industrial Dr
314-567-3636
NY Rochester
R G Eng
3100 Monroe Ave
716-385-3021
NY Fort Lee
Technical Marketing Assoc
2460 Lemoine Ave
201-224-6911
NY E Aurora
R G Engineering
67 Relter Rd
716-655-4322
OH Dayton
COMTEL Instruments Co
Kettering, Box 2036
513-298-7573
PA Ambler
DENCO Inc
25 Skippack Pk
215-542-9876
PA Pittsburgh
COMTEL Instruments Co
4 Pkwy Cntr
412-922-5720
TX Dallas
REMTEK
13500 Midway Rd
214-387-2855
TX Houston
REMTEK
9720 Townpark
713-988-9901; 713-227-2195
VA Rock Creek
REMTEK
1605 Rock Creek Dr
512-255-4103
WI Brookfield
Pivan Eng Co
3055 N Brookfield Rd
414-786-1940
ONTARIO, CANADA
Downsview
APTEC Eng Ltd
4251 Steeles Ave
416-661-9722
ONTARIO, CANADA
Ottawa
APTEC Eng Ltd
85 Albert St
613-232-9193
QUEBEC, CANADA
Montreal
L'INGENIERIE APTEC Ltee
3860 Cote Vertu Rd, Ville St Laurent
514-337-0227
QUEBEC, CANADA
Delta
APTEC Eng Ltd
Box 1234 Station A
604-943-9326

AUSTRALIA
Crows Nest NSW
Marine-Air Systems Pty Ltd
Box 888
439-5488
EIRE (IRELAND)
Co Neath
Euro Electronic Instruments
32 Brews Hill, Navan
23577 (NAVAN)
ENGLAND
London
Euro Electronic Instruments Ltd
Shirley House, 27 Camden Rd
(1) 267-2748/9
FRANCE
Asnieres
Metrologie
4, Ave Laurent-Cely;La Tour D'Asnieres
33(1)791 44 44
GERMANY, WEST
Sechholder
Data Logic Computer GmbH
623 Frankfurt/M 80
0611/39204
INDIA
Madras
Indchem Electronics Private Ltd
105 Dr Radhakrishman Salai;24 Feirberg St Melacha
848667 22 39 22
ISRAEL
Tel-Aviv
RCM Computers Ltd
20 Merkaz Ba'Alei, Melacha St
ITALY
Milano
Segi
Via Timavo, 12
60 73 184
JAPAN
Tokyo
Kyokuto Boeki Kaisha Ltd
New Otemachi Bldg, 2-1 2 Chome Otemachi
244-3511
NETHERLANDS
Netherlands
M & S Europe BV
1171 ZL Schipol Oost
31-020-472467
NEW ZEALAND
Wellington
Marine Safety Ltd
Box 12197, 155-161
720-113
SWEDEN
Solna
Systems Assoc AB
Hagalundsgatan 40
46-8-830980
SWITZERLAND
Geneva
Marli SA
14, rue de l'Ancien Port
(022) 3297-20

CSS TELECOMMUNICATIONS
2680 Bayshore Frontage Rd
Mountain View, CA 94043
415-964-4335
Contact: Jim Bradfield
■ Products & Services
Concentrators
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Error rate detectors
Protocol analyzers
Response-time monitors
Network management centers
Technical control centers
Code converters
Protocol converters
Voice digitizers
Data communications consultants
Branch Sales Offices:
CA Mt View
CSS Telecommunications Inc
2680 Bayshore Ftg Rd
415-964-4335

CUBIC CORP
9333 Balboa Ave
San Diego, CA 92123
714-277-6780
Contact: Bill D'Atessio
■ Products & Services
Applications packages
Custom programs
DDP systems software
Microfilm equipment, systems and services
Timesharing/service bureaus

CULLINANE DATABASE SYSTEMS, INC
400 Blue Hill Dr
Westwood, MA 02090
617-329-7700
Contact: Frank Chisholm
■ Products & Services
Applications packages
DDP systems software
Local network software
Operating systems
Word processing packages
Data communications consultants
Educational services
Timesharing/service bureaus
Branch Sales Offices:
CA Culver City
Cullinane Database Systems
5601 W Slauson AAve
213-642-0580
CA Palo Alto
Cullinane Database Systems
2471 E Bayshore Rd
415-856-0100
GA Atlanta
Cullinane Database Systems
1800 Century Blvd NE
404-634-6300
IL Oak Brook
Cullinane Database Systems
2809 Butterfield Rd
312-655-1454
MN Minneapolis
Cullinane Database Systems
1330 TCF Tower
612-341-2646
MO St Louis
Cullinane Database Systems
111 Westport Plaza
314-434-0887
NJ Denville
Cullinane Database Systems
75 Bloomfield Ave
201-625-2983

OH Cincinnati
Cullinane Database Systems
8035 Hosbrook Rd
513-891-7761

PA Philadelphia
Cullinane Database Systems
Scott Plaza II
215-521-2324

TX Houston
Cullinane Database Systems
2900 N Loop W
713-688-7210

ONTARIO, CANADA
Ottawa
Cullinane Canada Ltd
864 Lady Ellen Place
613-725-3382

ONTARIO, CANADA
Toronto
Cullinane Canada Ltd
920 Yonge St
416-928-0998

QUEBEC, CANADA
Montreal
Cullinane Canada Ltee
1010 Sherbrooke St W
514-844-1049

BELGIUM
1160 Bruxelles
Cullinane Benelux
Blvd Souverain 348
32-2-660-09-28

ENGLAND
London
Culliane UK Ltd
Premier House 150 Southampton Rd
01-837-9616

FINLAND
Helsinki 10
Finnsystems Oy
Aleski 15 A
358-0-177901

FRANCE
Montrouge
Sema Informatique
16-20 Rue Barbes
657-13-00

GERMANY, WEST
Kurt-Schumacher-Strasse 241
Adv/Orga F A Meyer GmbH
D 2940 Wilhelmshaven
04421 8021

ISRAEL
Tel Aviv
Contahal Ltd
54 IBN Gvirol St
972-3-260171

ITALY
Milan
Praxis Calcolo
32 Via Visconti di Modrone
799601

JAPAN
Tokyo 103
Century Research Center Corp
#2 3-Chome Hon-Cho
665-9907

MEXICO
Mexico 18
Cullinane Mexicana SA de CV
Filadelfia No 119
905-543-8554

SOUTH AFRICA
Randburg 2194 Transv
Computersons Ltd
264 Sanlamsentrum
1148-8334

SWITZERLAND
Zurich
Adv/Orga (Schweiz) GmbH
Mainaustrasse 17
41-1-251270

VENEZUELA
Caracas
T & G Internacional SA
58-2-782-4022

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

CUSHMAN ELECTRONICS
2450 N 1st St
San Jose, CA 95131
408-263-8100
Contact: Harris Fuller
Branch Sales Offices:

CA Santa Fe Springs
Kennedy Engineering Co
12821 E Imperial Hwy
213-868-9965

DC Washington
Powell Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535

IL Arlington Heights
Reshal Assoc Inc
219 W University Dr
312-398-7660

MA Concord
Chamberlin & Murray Inc
336 Baker Ave
617-369-8013

MO Overland Park
Harold J Curry Sales Co Inc
11508 W 90th St
913-492-6212

NY N Syracuse
LD Allen
6088 Taft Rd
315-458-7470

NC High Point
EME Inc
112 Buena Vista
919-869-3335

PA Lancaster
Barnhill Brothers
429 Nottingham Ave
717-569-7111

TX San Antonio
Repcom Inc
545 Rua de Matta
512-494-6822

WA Bellevue
Arva Hudson Inc
1638 Bellevue Wy NE
206-455-0773

CYBEREX INC
7171 Industrial Park Blvd
Mentor, OH 44060
216-946-1783
Contact: David C Griffith
■ Products & Services
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:

AL Birmingham
Crim Sales & Eng Co
Box 58033
205-871-6739

AZ Phoenix
F W Gorman Co
Box 10436
602-956-9820

CA Burlingame
Artwel Electric
Box 1301
415-347-9804

CA Costa Mesa
Dennis Don & Assoc
Box 1590
714-957-0844

CO Denver
Electrical Agencies Co
121 Mariposa St
303-623-8246

FL Brandon
Jim Meeks & Associates
Box 704
813-689-6137

GA Atlanta
T S Williams & Assoc
326 Sandy Spring Circle
404-255-0280

IL Mt Prospect
Weldy Lamont Assoc
East NW Hwy
312-398-4510

IN Munster
Weldy Lamont Assoc
Ridge Rd
219-924-2021

MD Columbia
Bradley Electro Sales
Box 2187
301-995-1820

MA Brimfield
E L Flowers & Sons Inc
Box 27 Wales Rd
413-245-7922

MA Holliston
MJ Fein & Co Inc
93 Stagecoach Rd
617-429-4008

MI Southfield
Engel Klaes Co
Box 281
313-355-1610

MN Eden Prairie
Computer Rm Remodeling & Construction
7525 Mitchell
612-934-5073

MN Minneapolis
Pinkney & Assoc
Box 32065
612-571-2040

MN New Orleans
Southwest Data
6000 Shetland Dr
504-394-2969

MO Kansas City
Cleaves-Bessmer-Marietti
Box 9490, 6303 Evanston
918-663-1883

MO St Louis
Gordon Karraker Co
706 Chestnut St
314-231-3666

NE Omaha
Clatterbaugh-Howrey Co
Box 14208
402-592-4130

NJ West Cadwell
MJ Fein & Co Inc
45 Cavell Pl
201-228-3500

NJ Livingston
MJ Fein & Co Inc
5 Chadwich Rd
201-994-3575

NM Albuquerque
FW Gorman Co
Box 743
505-247-1596

NY Scarsdale
MJ Fein & Co Inc
Box 28
914-472-1100

NY Staten Island
MJ Fein & Co Inc
682 Hylan Blvd
212-727-8888

NC Raleigh
Robert W Chapman & Co
3900 Merton Dr
919-782-2624

NC Charlotte
Waggoner Assoc
Box 11401
704-523-5476

OH Hudson
The Roger Benton Co
Box 2199
216-656-2317

OH Columbus
MJ Fein & Co Inc
2505 Coventry Rd
614-488-6446

OK Tulsa
Harold Furtney Co
Box 7081
918-492-5168

OR Portland
Malcar Assoc
220 SE 28th Ave
503-233-8755

PA Conshohocken
The Electrical Distributors Co
15 E Ridge Pike
215-825-6450

PA Pittsburgh
VerHill Assoc
3559 Laketon Rd
412-241-5202

SC West Columbia
Robert W Chapman & Co
Box 616
803-796-9796

SC Greenville
Robert W Chapman & Co
Box 50
803-288-8821

TN Knoxville
Robert W Chapman & Co
224 Way Station Tr
615-966-6120

TX Dallas
United Technical Marketing
Box 31070
214-231-5611

TX El Paso
FW Gorman Co
Box 223
915-532-9554

VT Salt Lake City
Dow Richardson Co
2089 West 2300 South
801-972-0844

VA Midlothian
Bradley Electro Sales
4906 Millridge Pkwy E
804-739-2104

CYLIX COMMUNICATIONS NETWORK
795 Ridge Lake Blvd
Memphis, TN 38119
901-761-1177
Advertising page 19
Contact: Bob Howard
■ Products & Services
Satellite carriers
Value-added carriers
Message switchers

Branch Sales Offices:

CA Fountain Valley
Andy Rogers
10061 Talbert Ave
714-963-8030

CO Colorado Springs
Ron Kaufman
3707 Parkmoor Village Dr
303-597-5458

IL Arlington Heights
Ron Cohen
415 West Golf Rd
312-640-9630

NY Cheektowaga
Ken Blake
1020 French Rd
716-668-0047

NY New York
Arthur Klein
122 E 42nd St
212-661-6837

PA King of Prussia
Craig Miller
1150 First Ave
215-337-7026

TX Irving
Daryl Doucet
4201 Wingren Dr
214-659-9310

DASA CORP
15 Stevens St
Andover, MA 01810
617-475-4940
Contact: John H Gilbride
■ Products & Services
Automatic calling units

DATA ACCESS SYSTEMS INC
Cole Rd & Camden Ave
Blackwood, NJ 08012
609-228-0700
Contact: Howard B Crystal
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
DDP systems
Disk drives, floppy
Programmable terminals
Portable data entry terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Cables, electrical prefabricated extending
Data access arrangement devices
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers

Branch Sales Offices:

AZ Phoenix
Data Access Systems Inc
11034 N 23rd Dr
602-944-9665

CA San Bruno
Data Access Systems Inc
1192 Cherry Ave
415-872-1811

CA Torrance
Data Access Systems Inc
1830 W 208th St
213-618-0400

CO Englewood
Data Access Systems Inc
7348 S Alton Way
303-741-2922

GA Norcross
Data Access Systems Inc
2979 Pacific Dr NW
404-449-5436

IL Morton Grove
Data Access Systems Inc
8129 N Austin Ave
312-967-0440

MD Lanham
Data Access Systems Inc
4720-C Boston Way
301-459-3560

MA Norwood
Data Access Systems Inc
51 Morgan Dr
617-769-6420

MI Troy
Data Access Systems Inc
1409 Allen Dr
313-589-1409

NJ Parsippany
Data Access Systems Inc
343 New Rd
201-227-8880

NY Fairport
Data Access Systems Inc
850 Fairport Park
716-377-2080

NY New York
Data Access Systems Inc
One Penn Plaza
212-564-9301

OH Cleveland
Data Access Systems Inc
299 Alpha Park
216-473-2131

OH Cincinnati
Data Access Systems Inc
11315 Reed Hartman Hwy
513-793-9714

PA Bala Cynwyd
Data Access Systems Inc
One Bala Cynwyd Plaza
215-667-8315

TX Houston
Data Access Systems Inc
2200-C Central Pkwy
713-682-5965

TX Irving
Data Access Systems Inc
1717 Walnut Hill Lane
214-256-5536

WA Tukwila
Data Access Systems Inc
811 Industry Dr
206-251-5070

DATABASE DESIGN INC
2385 Huron Pkwy
Ann Arbor, MI 48104
313-971-5363
Contact: David L Bowers
■ Products & Services
DDP systems
Database processors
Educational services

Branch Sales Offices:

CA Calabasas
Stan Felderman
4224 North Park Alisal
213-888-6058

CA Oakland
Jim Odell
339 62nd St
415-547-4231

MA Boston
Phyllis Notini
27 State St
617-523-3074

TX Houston
Sam Rose
12 Rocky Ln
713-658-9696

DATACOMM MANAGEMENT SCIENCES INC
25 Van Zant St
East Norwalk, CT 06855
203-838-7183
Contact: Thomas F Conrad Jr
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
EIA cable testers
Electrical-parameters test equipment
Response-time monitors
Network management centers
Technical control centers
Switches, data communications: automatic
Switches, data communications: manual

DATA COMMUNICATIONS INSTITUTE
1221 Ave of Americas
New York, NY 10020
212-997-2015
Advertising pages 18,160
Contact: Lois Bruu
■ Products & Services
Educational services

DATA CONTROL SYSTEMS DIV OF GENERAL INDICATOR CORP
PO Box 860
Danbury, CT 06810
203-743-9241
Contact: William S Halpin
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, group band
Line drivers
Modems, multipoint
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Modem eliminators
Local networks
Selection & transfer equipment: monitor & test switching equipment
Data communications consultants
Branch Sales Offices:
AL Huntsville
Gentry Assoc
2109 W Clinton Ave
205-534-9771
AZ Mesa
Data Systems Marketing
2256 W Catalina Ave
602-833-0061
CA Costa Mesa
Data Systems Marketing
2950 Airway Ave
714-540-2312
CO Denver
Data Systems Marketing
955 Bannock
303-573-5133
FL Orlando
Gentry Assoc
7527 Currency Dr
305-859-7450
GA Roswell
Gentry Assoc
9800 Grimes Bridge Rd
404-998-2828
IL Des Plaines
Lincoln Hodges & Assoc
3158 Des Plaines Ave
312-297-3810
LA Gretna
Gentry Assoc
1799 Stumpf Blvd
504-367-3975
MD Laytonsville
GT Assoc
6501 Griffith Rd
301-949-8060
MI Ann Arbor
Lincoln Hodges & Assoc
201 S Main St
313-995-2155
MO Independence
Engineering Services Comp
2425 S Crysler
816-254-3600
NM Albuquerque
Data Systems Marketing
3620 Wyoming NE
505-294-5790
NY Dewitt
db Associates
3307 Erie Blvd East
315-446-0220
NC Burlington
Gentry Assoc
428 Alamance Rd
919-227-3639
OK Oklahoma City
Data Marketing Assoc
2401 Northwest 39 Expry
405-528-6071
OR Hillsboro
Data Systems Marketing
910 NW Brookwood
503-640-4883
PA Pittsburgh
Data Systems Marketing
3107 Greenfield Rd
412-486-2676
SC Greenville
Gentry Assoc
Green Gate Park
803-271-8543
TX Dallas
Data Marketing Assoc
14235 Proton Rd
214-661-0300
UT Salt Lake City
Data Systems Marketing
1864 S State St
801-487-8281
WA Bothell
Data Systems Marketing
10412 Beardslee Blvd
206-487-3571
WI Waukesha
Lincoln Hodges & Assoc
217 Wisconsin Ave
414-542-3087
QUEBEC, CANADA
St Lambert
Commetrics Ltd
Box 278
514-672-4534
AUSTRALIA
Vermont, Victoria
Dindima Group
Box 106
03-873-4455
ENGLAND
Middlesex
Data Communications Division/Aeradio House
Hayes Rd Southall
01-574-2411
FRANCE
Saint Maur
Cemco
16 Avenue Raspail
885-2701
GERMANY, WEST
Muenchen
Testem MBH
Liebigstrasse 12
089-22 24 12
ISRAEL
Bene Baraq
AEL Israel Ltd
7 Jabotinsky St
70411
JAPAN
Tokyo
Chisho Corp
1-8-17 Yaesu Chuo-Ko
03-272-3321

DATACUBE
670 Main St
Reading, MA 01867
617-944-4600
Contact: Robert Wang
■ Products & Services
Teleconferencing networks
Branch Sales Offices:
AL Huntsville
Pen-Tech Associates
Holliday Office Ctr, 3322 Memorial Pkwy SW
205-881-9298
CA Pasadena
A-F Sales Engineering Inc
1000 East Walnut St
213-681-5631
CA Palo Alto
Qualtech Associates
4151 Middlefield Rd
415-494-9060
CO Denver
Electrodyne Inc
4600 East Asbury Circle
303-759-4409
FL Casselberry
Pen-Tech Associates
1398 Semoran Blvd
305-645-3444
FL Deerfield Beach
Pen-Tech Associates
201 SE 15th Terrace
305-421-4989
GA Marietta
Pen-Tech Associates
627 Cherokee St
404-424-1931
IL Rolling Meadows
Sumer Inc
1675 Hicks Rd
312-991-8500
IN Indianapolis
Leslie M Devoe Inc
4371 East 82nd St
317-842-3245
MD Catonsville
Robert Electronic Sales
6407 Frederick Rd
301-788-2380
MA Acton
John Redding Association Inc
77 Great Rd
617-263-8206
NM Albuquerque
BFA Inc
1704 Moon NE
NC High Point
Pen-Tech Associates
1202 Eastchester Dr
919-883-9125

OH Cincinnati
Applied Data Management Inc
435 Dayton St
513-579-8108
OR Portland
Technical Application Sales Co Inc
7764 SW Alden
503-245-8168
TX Houston
Industrial Digital Systems Corp
5925 Sovereign Dr
713-988-9421
WA Bellevue
Technical Application Sales Co Inc
606—110th Ave NE
206-453-1414
FRANCE
Sevres
Tekelec Airtronic
Cite Des Bruyeres, Rue Carle Vernet
ISRAEL
Tel Aviv
R N Electronics Agencies Ltd
103 Hagolan St
SWEDEN
Stockholm
Nordisk Electronic AB
Sandhamnsgatan 71

DATA DIMENSIONS INC
50 Washington St
Norwalk, CT 06854
203-853-2290
Contact: John W Carman
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Batch terminals
Graphic display terminals
Programmable terminals
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Video data terminals (KSR)
Data access arrangement devices
Data communications consultants
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Encino
Data Dimensions Inc
16311 Ventura Blvd
213-990-9200
CA San Mateo
Data Dimensions Inc
1670 S Amphlett Blvd
415-349-7262
GA Atlanta
Data Dimensions Inc
2580 Cumberland Pkwy
404-433-2023
IL Glen Ellyn
Data Dimensions Inc
800 Roosevelt Rd
312-858-3770
MI Deerfield
Data Dimensions Inc
Upper Road
413-770-0376
NY New York
Data Dimensions Inc
60 E 42 St
212-687-2030
OH Cincinnati
Data Dimensions Inc
4000 Executive Park Dr
513-769-0680
PA Cherry Hill
Data Dimensions Inc
811 Church Rd
609-662-2833
TX Houston
Data Dimensions Inc
4550 Post Oak Place Dr
713-961-4711

DATA ELECTRONICS INC
10150 Sorrento Valley Rd
San Diego CA 92121
714-452-7840
Contact: W G Lynn
■ Products & Services
Cartridges
Cartridge drives
Tape drives, magnetic
Branch Sales Offices:
AZ Scottsdale
Thorson Desert States Inc
6560 N Scottsdale Rd
602-998-2444
CA Irvine
Data Electronics Inc
2192 Dupont Dr
714-752-0659
CA Sunnyvale
Data Electronics Inc
510 Lawrence Exprwy
408-739-7882
CA San Diego
Gemini Assoc
4236 Balboa Ave
714-270-0088
CO Denver
Thorson Rocky Mountain Inc
7076 S Alton Way
303-779-0666
FL Stuart
Remtek Inc
951 Colorado Ave
305-287-8440
IL Northbrook
MTA Marketech Assoc
3677 Woodhead Dr
312-291-1220
MD Wheaton
Data Systems Marketing
11141 Georgia Ave
301-933-0900
MA Acton
Array Products Inc
75 Great Rd
617-263-1128
NH Nashua
Data Electronics Inc
7½ Harris Rd
603-888-6262
NJ Fort Lee
Technical Marketing Assoc
2460 Lemoine Ave
201-224-6911
PA King of Prussia
Rivco January Inc
Box 338
215-265-5211
TX Dallas
Remtek
13500 Midway Rd
214-387-2855
TX Houston
Remtek
9720 Town Park
713-227-2195
UT Salt Lake City
Thorson Rocky Mountain Inc
3691 West 1987 S
801-973-7969
WA Bellevue
Olson Ferree & Assoc Inc
12727 Notheast 20
206-883-7792

DATA EQUIPMENT INC
238 Caribbean Dr
Sunnyvale, CA 94086-1080
408-734-5610
Contact: Ed Mahboobii
■ Products & Services
Telephone companies
Modems, voice-grade, low-speed (0-1,200 b/s)
Add-on main memory
Disk drives, floppy
Disk drives, large
Graphic display terminals
Interactive terminals
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Word processors, communicating
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
CA San Francisco
Data Equipment Inc
100 California #1172
415-397-2950

DATA GENERAL CORPORATION
4400 Computer Dr
Westboro, MA 01581
617-366-8911
Advertising pages 138-139
Contact: Frank Keaney
■ Products & Services
Front-end processors
DDP systems
Local networks
Local network interfaces
Minicomputers
Database processors
Add-on main memory
Add-on auxilliary memory
Cartridge drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Applications packages
Custom programs
DDP systems software
Emulation packages
Local network software

Transport software
Access program
Operating systems
Teleprocessing monitors
Word processing packages
Computer/communications interfaces
Power supplies

Branch Sales Offices:

CA Palo Alto
Data General
2445 Faber Pl
415-856-6060

GA Norcross
Data General
6855 Jimmy Carter Blvd
404-448-6072

NY Melville
Data General
445 Broad Hollow Rd
516-454-8900

VA McLean
Data General
7927 Jones Branch Dr
703-827-9610

QUEBEC, CANADA
Mississauga
Data General
2155 Leanne Blvd
416-823-7830

FRANCE
Paris
Data General Europe
Tour Manhattan
33-1 776-44-15

DATAGRAPHIX INC
Box 82449
San Diego, CA 92138
714-291-9960
Contact: Rich Steele
■ Products & Services
Disk drives, large
Tape drives, magnetic
Interactive terminals
Teleprinters, non-impact

Branch Sales Offices:

CA Culver City
DatagraphiX Inc
5901 Green Valley Circle, #20
213-642-7615

CA Oakland
DatagraphiX Inc
8477 Enterprise Way
415-562-9074

GA Atlanta
DatagraphiX Inc
2400 Perimeter Center E
404-394-4814

IL Oak Brook
DatagraphiX Inc
2222 Camden Ct
312-920-5350

MD Bethesda
DatagraphiX Inc
4550 Montgomery Ave
301-654-5228

MA Lexington
DatagraphiX Inc
1050 Waltham St
617-861-7930

MN Bloomington
DatagraphiX Inc
2850 Metro Dr
612-854-2984

NY New York
DatagraphiX Inc
52 Vanderbilt
212-599-2470

OH Rocky River
DatagraphiX Inc
20950 Center Ridge Rd
216-333-5311

TX Dallas
DatagraphiX Inc
4232 Sigma Rd
214-386-7003

BELGIUM
Bruxelles
DatagraphiX SA
Avenue Lloyd George 7
640-1616

ENGLAND
Maidenhead
DatagraphiX Int'l Support
Shoppenhangers Rd
Maidenhead 32255

ENGLAND
Windsor
DatagraphiX Ltd
Drift Rd
Std 03447

FRANCE
Paris
DatagraphiX SARL
72-74 Quai de la Loire
1-200-22-22

GERMANY, WEST
Wiesbaden
DatagraphiX GmbH
Abraham Lincolnstrasse 28
700085

NETHERLANDS
Hilversum
DatagraphiX Nederland
Coehoornstraat 71
830854

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

DATAGRAPHIX INC/DISPLAY DEPT
Box 82449
San Diego, CA 92138
714-291-9960
Contact: P C Ressler Jr
■ Products & Services
Video data terminals (KSR)

Branch Sales Offices:

AL Huntsville
COL-INS-CO INC
Contact Orlando Office
800-327-6600

AZ Phoenix
Southwest Peripherals Co
2875 Sky Harbor Blvd
602-267-7536

CA San Diego
DatagraphiX Inc
Box 82449
714-291-9960

CA Culver City
DatagraphiX Inc
5901 Greenvalley Circle
213-642-7615

CT Southbury
J J Wild Inc
Box 342
203-264-9494

FL Orlando
COL-INS-CO INC
Box 13189
305-423-7615

FL Fort Lauderdale
COL-INS-CO INC
Contact Orlando Office
800-432-4480

GA Atlanta
COL-INS-CO INC
Contact Orlando Office
800-327-6600

GA Atlanta
DatagraphiX Inc
3355 Lenox NE
404-266-1328

IL Oak Brook
DatagraphiX Inc
2222 Camden Ct
312-920-5380

LA Baton Rouge
COL-INS-CO INC
Contact Orlando Office
800-327-6600

MD Rockville
TeLFree Associates
414 Hungerford Dr
301-340-7337

MA Needham
J J Wild Inc
163 Reservoir St
617-444-2366

NH Merrimack
J J Wild Inc
Box 594
603-424-4717

NM Albuquerque
Southwest Peripherals Co
Box 11849
505-299-7000

NM Anthony
Southwest Peripherals Co
Box 672
505-882-3333

NY 212-599-3095
DatagraphiX Inc
52 Vanderbilt
516-935-2020

NY Rochester
J Cameron Associates
29 Goodway Dr
716-473-4590

NY Albany
J Cameron Associates
Box 239
518-371-5947

NC Raleigh
COL-INS-CO INC
Contact Orlando Office
800-327-6600

NC Winston-Salem
COL-INS-CO INC
Contact Orlando Office
800-327-6600

PA Harleysville
P B Lotz Associates
500 Main St
215-256-6588

SC Greenville
COL-INS-CO INC
Contact Orlando Office
800-327-6600

TN Nashville
COL-INS-CO INC
Contact Orlando Office
800-327-6600

ENGLAND
Maidenhead
DatagraphiX Inc
Maidenhead Eurocrest
Shoppenhangers Rd
0628-32255

DATA MATE/THE MAINE MFG CO
Box 408
Nashua, NH 03061
800-258-1768
Contact: Wilfred Red Dionne

■ Products & Services
Furniture, cabinets, terminal enclosures

DATAMEDIA CORP
7401 Central Hwy
Pennsauken, NJ 08109
609-665-5400
Contact: J Berman
■ Products & Services
DDP systems
Data entry terminals
Graphic display terminals
Programmable terminals
Portable data entry terminals
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:
CA Long Beach
Datamedia Corp
2750 Bellflower Blvd
213-429-2466
CA Santa Clara
Datamedia Corp
1333 Lawrence Expwy
408-248-1080
GA Atlanta
Datamedia Corp
3300 Buckeye Rd NE
404-458-7877
MD Gaithersburg
Datamedia Corp
19516 Clubhouse Rd
301-948-1670
MA Wellesley
Datamedia Corp
148 Linden St
617-235-5028
NJ Elizabeth
Datamedia Corp
125 Broad St
201-965-0190
NY Pennsauken
Datamedia Corp
7401 Central Hwy
609-665-5400
TX Dallas
Datamedia Corp
2964 LBJ Freeway
214-484-7115

DATAMEDIX INC
Rt 1, Providence Highway
Sharon, MA 02067
617-784-7878
Contact: Stephen C Sarmanian
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Applications packages
Custom programs
Branch Sales Offices:
IL Lombard
Datamedix Inc
55 West 22nd St
312-629-2323
MA Westwood
Datamedix Inc
352 University Ave
617-329-2292
TX Dallas
Datamedix Inc
1230 River Bend Dr
214-630-8044

DATAMETRICS CORP—DEFENSE PRODUCTS DIV
7630 Gloria Ave
Van Nuys, CA 91406
213-989-3840
Contact: Jim Foti
■ Products & Services
Digital plotters
Remote line printers
Teleprinters
Teleprinters, non-impact
Power supplies
Branch Sales Offices:
FL Orlando
Truex Associates
4804 S Orange Ave
305-859-2160
NJ Eatontown
Burkhard Associates
273 Wall St
201-222-4480
NY Northport
Data Logic Sales
44 Woodbine
516-757-3330
OK Tulsa
Datametrics Corp
Box 33097
918-663-6515
VA Falls Church
Negley Associates
Box 76
703-237-0930
GERMANY, WEST
Munchen
Technitron GmBH
Martin Luther Strabe 20

DATANEX INC
PO Box 30008
Eugene, OR 97403
■ Products & Services
Applications packages
DDP systems software
Emulation packages

DATA PLUS INC
7205E Lockport Place
Lorton, VA 22079
703-550-7914
Contact: Michael C Lawson
■ Products & Services
Port sharing units
Terminal controllers
Automatic answering units
Automatic calling units
Protocol converters
Switches, data communications: automatic

DATAPOINT CORPORATION
9725 Datapoint Dr
San Antonio, TX 78284
512-699-7151
Contact: Product Marketing Dept
■ Products & Services
Value-added carriers
Branch exchanges—programmable (IBX, EPBX, etc.)
Infrared systems
Modems, multiport
DDP systems
Local networks
Minicomputers
Cartridges
Cartridge drives
Cassettes
Cassette drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Tape, magnetic
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Video data terminals (KSR)
Word processors, communicating
Automatic answering units
Automatic calling units
Computer/communications interfaces
Protocol converters
Switches, data communications: automatic
Educational services
Maintenance organizations
Branch Sales Offices:
AL Birmingham
Datapoint Corp
205-252-0623
AZ Phoenix
Datapoint Corp
602-273-6223
CA Irvine
Datapoint Corp
714-752-9073
CA Los Angeles
Datapoint Corp
213-385-0395
CA San Francisco
Datapoint Corp
415-398-2888
CA Oakland
Datapoint Corp
415-562-5612
CA Sacramento
Datapoint Corp
916-920-8743
CA San Mateo
Datapoint Corp
415-572-1360
CA San Diego
Datapoint Corp
714-280-1484
CO Denver
Datapoint Corp
303-321-8286
CT East Hartford
Datapoint Corp
203-289-9364
CT Stamford
Datapoint Corp
203-359-4175
DC Washington
Datapoint Corp
703-841-7600
FL Miami
Datapoint Corp
305-621-4335
FL Orlando
Datapoint Corp
305-896-1940
FL Tampa
Datapoint Corp
813-879-8216
FL Jacksonville
Datapoint Corp
904-264-6935
GA Atlanta
Datapoint Corp
404-325-2212
HI Honolulu
Datapoint Corp
808-833-2110
IL Chicago
Datapoint Corp
312-977-1470
IL Des Plaines
Datapoint Corp
312-298-1240
IN Indianapolis
Datapoint Corp
317-299-4253
IA Des Moines
Datapoint Corp
515-225-9070

KY Louisville
Datapoint Corp
502-893-2531
LA New Orleans
Datapoint Corp
504-831-8101
MA Boston
Datapoint Corp
617-890-0440
MI Detroit
Datapoint Corp
313-855-2900
MN Minneapolis
Datapoint Corp
612-854-4054
MO Kansas City
Datapoint Corp
816-474-2160
MO St Louis
Datapoint Corp
314-878-6595
NJ New Jersey
Datapoint Corp
201-368-0070
NY Albany
Datapoint Corp
518-459-7781
NY New York
Datapoint Corp
212-971-9270
NY Rochester
Datapoint Corp
716-248-2616
NC Charlotte
Datapoint Corp
704-527-5300
NC Greensboro
Datapoint Corp
919-299-8401
OH Cincinnati
Datapoint Corp
513-984-5057
OH Cleveland
Datapoint Corp
216-351-1775
OH Columbus
Datapoint Corp
614-890-7686
OH Toledo
Datapoint Corp
419-474-5766
OK Oklahoma City
Datapoint Corp
405-942-8714
OK Tulsa
Datapoint Corp
918-664-2295
OR Portland
Datapoint Corp
503-644-5575
PA Philadelphia
Datapoint Corp
215-667-9477
PA Pittsburgh
Datapoint Corp
412-788-4440
SC Charleston
Datapoint Corp
803-571-1653
TN Memphis
Datapoint Corp
901-761-3080
TN Nashville
Datapoint Corp
615-361-5981
TX Dallas
Datapoint Corp
214-661-5536
TX Houston
Datapoint Corp
713-680-2200
TX San Antonio
Datapoint Corp
512-734-8982
TX Ft Worth
Datapoint Corp
817-457-9050
UT Salt Lake City
Datapoint Corp
801-262-2915
VA Richmond
Datapoint Corp
804-285-8611
WA Seattle
Datapoint Corp
206-455-2044
WI Milwaukee
Datapoint Corp
414-453-1425
QUEBEC, CANADA
Toronto
TRW Data Systems
416-492-7400
ARGENTINA
Buenos Aires
Mapex Srl
34-0213
AUSTRALIA
Sydney
Datapoint Corporation Pty Ltd
02-922-3100
AUSTRIA
Vienna
Datapoint International GES mbH
222 65 4796
BELGIUM
Brussels
SAIT Electronics
2-376-2030
BRAZIL
Rio de Janerio
Datapoint do Brazil—Informatica o Comunicacao Ltda
21-222-6795
DENMARK
Ballerup
Datapoint Denmark A/S
2 65 23 66
EGYPT (UAR)
Cairo
Data Egypt
ENGLAND
London
Datapoint (UK) Limited
1-459-1200
FINLAND
Helsinki
Oy Nokia
661991
FRANCE
Paris
MATRA Informatique
1-687-31-24
GERMANY, WEST
Hannover
Datapoint Deutchsland GES mbH
0511-67971
GREECE
Piraeus
CHERMA Electronics
1-4123471
HONG KONG
Hong Kong
ODS Computers (Lib) Inc.
5-243-121
ISRAEL
Tel Aviv
IS Information Systems
03-483261
ITALY
Milan
ENCODEX
02-659-7041
JAPAN
Tokyo
CJK Co. Ltd
3-264-6131
MALAYSIA FED OF
Kuala Lumpur
Oriental Data Systems
927366
MEXICO
Mexico City
Kronos Computacian Y Teleproceso SA
905 540-6720
NETHERLANDS
Rotterdam
Datapoint Nederland, BV
10-1820 29455
NEW ZEALAND
Auckland
Datapoint Corporation Pty Ltd
9 50-4099
NORTHERN IRELAND
Dublin
Datapoint (UK) Limited
1 783 166
NORWAY
Oslo
A/S SCANIPS
02-35780
PHILIPPINES
Mikati Rizal
Applied Systems
2 877-294
PORTUGAL
Lisbon
GEEG Computadores LDA
351 562-459
SINGAPORE
Singapore
Oriental Data Systems
915 822
SOUTH AFRICA
Johannesburg
Computer Sciences
11 28-1150
SPAIN
Madrid
Datapoint Iberica SA
247-4705
SWEDEN
Hagersten
Nokia AB Elektronik
8-744-5300
SWITZERLAND
Zurich
Datapoint (Schweiz) AG
01-545646
TAIWAN
Taipei
EDP Taiwan Inc
2-768114
THAILAND
Bangkok
ODS United Co Ltd
2825689
VENEZUELA
Caracas
Data SA
2 213-386

DATA PRINTER CORP
99 Middlesex St
Malden, MA 02148
617-321-2400
Contact: Steve Petit

■ Products & Services
Batch terminals
Remote line printers
Branch Sales Offices:
CA Santa Ana
Data Printer Corp
3877 S Main St
714-557-6582
CA Sunnyvale
Data Printer Corp
1225 Tiros Way
408-739-4310
TX Dallas
The Thorson Company
4445 Alpha Rd
214-233-5744

DATAPROBE INC
110 W Palisade Blvd
Palisades Park, NJ 07650
201-947-9500
Contact: Sy Weiss
■ Products & Services
Modem eliminators
Microcomputer/ microprocessor systems
Tape punch/reader, paper
Code/protocol conversion programs
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data security devices: encoder/decoders
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Data communications consultants
Branch Sales Offices:
NJ Palisades Park
Datanet Inc
120 W Palisades Ave
201-592-6750
VA Falls Church
Data Communications Systems Corp
254 N Washington St
703-241-7803

DATA PROCESSING MANAGEMENT ASSOCIATION
505 Busse Hwy
Park Ridge, IL 60068
312-825-8124
Contact: Marion Okon
■ Products & Services
Educational services
Branch Sales Offices:
CA Canoga Park
Norman Schindler & Assoc
7050 Owensmouth Ave
213-999-1414
IL Lincolnwood
The Pattis Group
4761 W Touhy
312-679-1100
IL Park Ridge
Data Processing Management Ass
505 Busse Hwy
312-825-8124
NY New York
The Pattis Group
485 Madison Ave
212-355-4000

DATAPRODUCTS CORPORATION
6200 Canoga Ave
Woodland Hills, CA 91365
213-887-8000
Contact: Robert Lawrence
■ Products & Services
Add-on main memory
Remote line printers
Teleprinters
Teleprinters, impact
Word processors, communicating
Ribbons and supplies for terminals and printers
Branch Sales Offices:
CA Irvine
Dataproducts
19772 MacArthur Blvd
714-752-7411
CA Irvine
Dataproducts
17426 Daimler Ave
714-540-4756
CA Chatsworth
Dataproducts
9657 Mason Ave
213-882-0530
CT Wallingford
Dataproducts
Barnes Park N
203-265-7151
FL Sunrise
Dataproducts
7770 W Oakland Park Blvd
305-748-0105
FL Altamonte Springs
Dataproducts
101 Wymore Rd
305-299-9394
MA Wellesley Hills
Dataproducts
36 Washington St
617-237-4711
MI Troy
Dataproducts
275 E Big Beaver Rd
313-528-1304
MN Minneapolis
Dataproducts
4940 Viking Dr
612-835-2066
NJ Lanoka Harbor
Dataproducts
Lanlac 1, Hwy 9
609-693-2021
OH Cleveland
Dataproducts
26250 Euclid Ave
216-261-0442
PA Wayne
Dataproducts
999 Old Eagle School Rd
215-293-1810
TX Richardson
Dataproducts
777 S Central Expwy
214-231-2240
TX Austin
Dataproducts
111 W Anderson
512-454-6754
VA Vienna
Dataproducts
8330 Old Courthouse Rd
703-556-0225
PUERTO RICO
Ponce
Dataproducts
PO Box 7728
809-844-0618
AUSTRIA
Vienna
Dataproducts Handels GmbH
Hintere Zollantsstrasse
43-222-753452
EIRE (IRELAND)
Dublin
Dataproducts Ltd
Greencastle Rd Coolock
353-1-474-855
ENGLAND
Reading
Dataproducts Ltd
31/39 South St
44-734-585723
ENGLAND
Ascot, Berkshire SL5, 7EU
Dataproducts Int'l Ltd
Index House
44-990-23377
FRANCE
Rungis Principal
Dataproducts Int'l Inc
Cedex A 115
331-687-1707
GERMANY, WEST
Neu Isenberg
Dataproducts Int'l
Frankfurter Strasse 172-176
01-49-06102
HONG KONG
Kwung Tong, Kowloon
Dataproducts Ltd
95 How-Ming St
852-3-430-231

DATAPRODUCTS OF NEW ENGLAND
Barnes Park North
Wallingford, CT 06492
203-265-7151
Contact: Ann Akula
■ Products & Services
Multiplexers, time division
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
MIL 188C adapters
Error rate detectors
Protocol analyzers
Network management centers
Technical control centers
Data entry terminals
Interactive terminals
Remote line printers
Teleprinters
Data security devices: encoder/decoders
Selection & transfer equipment: monitor & test switching equipment
Branch Sales Offices:
CA Brea
X-On Data Inc
371 Oak Pl Unit E
714-671-1966
FL Melbourne
EME III Inc
1495 N Harbor City Blvd
305-259-2711
GA Decatur
EME II Inc
2522 Tanglewood Rd
404-325-0165
NC High Point
EME Inc
112 Buena Vista
919-869-3335
VA Williamsburg
EME IV Inc
107 Richneck Rd
804-253-0171

DATAPRO RESEARCH CORP
1805 Underwood Blvd
Delran, NJ 08075
609-764-0100
Contact: J McErlain
■ Products & Services
Educational services

DATARAM CORP
Princeton Rd
Cranbury, NJ 08512
609-799-0071
Contact: John F Gilligan
■ Products & Services
Add-on main memory
Add-on auxilliary memory
Branch Sales Offices:
AL Hunstville
Col-Ins-Co
Box 4028
205-881-9512
CA Fountain Valley
MQI Computer Products
18381 Bandilier Cr
714-964-4722
CA Mountain View
Thorson W
625 Ellis St
415-964-9300
FL Orlando
Col-Ins-Co
Box 13189
305-423-7615
FL Coral Springs
Col-Ins-Co
Box 8827
800-432-4480
GA Clarkston
Col-Ins-Co
Box 559
800-327-6600
LA Baton Rouge
Col-Ins-Co
11814 Coursey Blvd
800-327-6600
MD Gaithersburg
Technical Sales Assoc
19544 Club House Rd
301-258-9790
NJ Ft Lee
Technical Marketing Assoc
2460 Lemoine Av
201-224-6911
NJ Haddonfield
Williams Associates
805 Hopkins Rd
609-428-6060
NY Rochester
RG Engineering
3100 Monroe Av
716-385-3021
NC Winston-Salem
Col-Ins-Co
Box 11607
800-327-6600
TX Houston
Thorson SW
6633 Hillcroft
713-771-3504
TX Dallas
Thorson SW
4445 Alpha Rd
214-233-5744
TX Austin
Thorson SW
300 E Huntland Dr
512-451-7527
ONTARIO, CANADA
Rexdale Ont
Ahearn & Soper Ltd
31 Enterprise Rd
416-245-4848
AUSTRALIA
Victoria
Anderson Digital Equip
1 Expo Ct
03-543-2077

ENGLAND
Reading
Sintrom Ellinor Ltd
14 Arkwright Rd
0734-85464
FINLAND
Helsinki
Systek Oy
Aleksis Kiven Katu 3
09-737-233
FRANCE
B P 40-78530 Buc
YREL
Z I Rue Fourny
956-81-42
GERMANY, WEST
L Echterdingen 2
OEM-Elektronik GmbH
Friedrich List Str 34, 7022
711 79 80 47
INDIA
Ahmedabad
Infosystems Private Ltd
30 NBK Society, Ellis-Bridge
79281
ISRAEL
Tel Aviv
Minix Computers & Systems Ltd
76 Hachashonaim St
03-298783
ITALY
20125 Milano
ESE srl Electronic Systems
Via Villa Mirabello 6
39 607 3626
JAPAN
Tokyo
Matsushita Elec Trading Co Ltd
4-1, 2-Chome, Hamamatsu-cho;
Minato-Ku
03-435-4501
JAPAN
Osaka
Matsushita Elec Trading Co Ltd
Box 288
06-204-5111
NETHERLANDS
Schiphol Ap East
Technitron bv
Bldg 70 Box 7542
020-458755
POLAND
00950 Warszaw
Unitronex Corp
Intraco Building UL Stawki 2
39 6218
SWEDEN
Vallingby
M Stenhardt AB
Box 331
08-739-00-50
SWITZERLAND
Schlieren
ADCOMP AG
Steinwiesenstrasse 3
01/730-48-48

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

DATA RENTALS/SALES INC
Box 3257
Culver City, CA 90230
213-559-3822
Contact: Steven Beaver
■ Products & Services
Acoustic couplers
Line drivers
Modems, limited distance
Modems, voice-grade, low-speed
(0-1,200 b/s)
Data entry terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Automatic answering units
Data access arrangement devices
Lease and resale organizations
Used equipment
Branch Sales Offices:
CA Burlingame
Data Rentals/Sales Inc
833 Mahler Rd
415-697-4911
FL Tarpon Springs
Data Rentals/Sales Inc
711B Klosterman Rd
813-934-0829
NC Charlotte
Data Rentals/Sales Inc
4801 Independence Blvd
704-536-7533

DATAROYAL
235 Main Dunstable Rd
Nashua, NH 03061
603-883-4157
Contact: Shirley Biron
■ Products & Services
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teletypewriters
Word recognition units
Word processors, communicating
Branch Sales Offices:
AZ Phoenix
Computer Peripheral Sales
6819 21st Ave
602-242-4025
CA Tustin
Dataroyal
160 Centennial Way
714-838-4530
CA San Jose
Louiswood Associates
330 N Market St
408-295-9600
FL Orlando
W A Brown Instruments
Box 513
305-425-5505
IL Chicago
Data Electronics Co
4976 N Milwaukee Av
312-283-0300
MD Wheaton
T E Corporation
2401 Blue Ridge Ave
301-946-8300
MA Newton
EMC Corp
385 Elliott St
617-244-4740
MS St Louis
Inland Associates
13100 Manchester Rd
314-821-3742
NJ Perth Amboy
Marlin Data Systems
774 Pfeiffer Blvd
201-442-3400

OH Dayton
Dataroyal
2801 Far Hills Ave
513-294-6426

OH Chesterland
EQS Systems Inc
8517 Herrick Dr
216-729-2222

PA King of Prussia
J E Cuesta & Co
570 W DeKalb Pike
215-265-5800

TX Dallas
Technology Marketing Corp
2925 OBJ Expwy
214-243-7994

UT N Salt Lake City
R2 Marketing
940 N 400 E
801-298-2631

WA Bellevue
Marra & Associates
1739 172nd Pl NE
201-641-3535

AUSTRALIA
Sydney
System One Pty Ltd
255 Pitt St

SWEDEN
Stockholm
Facit Data Products
S-105 45
011-46-8738-7330#

DATA SCIENCE
1189 Oddstad Dr
Redwood City, CA 94063
415-365-8891
Contact: Max Liaug
■ Products & Services
Tape punch/reader, paper
Data entry terminals
Video data terminals (KSR)
Code converters
Branch Sales Offices:
CA San Mateo
ACO Pacific
Box 5506
415-591-8509

DATA SET CABLE CO INC
722 Danbury Rd
Ridgefield, CT 06877
203-438-9684
Advertising page 154
Contact: Ted Busch
■ Products & Services
Line drivers
Modems, limited distance
Modem eliminators
EIA cable testers
Cables, electrical prefabricated extending
Computer/communications interfaces
Data jacks and plugs
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: manual
Branch Sales Offices:
CA Laguna Hills
Western Marketing Enter
25251 Paseo DeAlicia
714-855-1059

CT Georgetown
RSA
4 Old Mill Rd
203-544-8300

FL Orlando
FM Assoc
Box 13705
305-851-5710

GA Marietta
Rothchild Comm Corp
2926 Kodack Ct
404-977-1600

MD Silver Spring
Carwithen Assoc
1400 Spring St
301-589-9040

NV Las Vegas
Data Set Cable Co
3001 Contract Ave
702-382-6777

NJ Ringwood
Aras Enterprises Inc
91 Miller Ln
201-728-9443

NY Great Neck
Harvey J Krasner Assoc
33 Great Neck Rd
516-487-0690

TX Dallas
Computer Assoc
8383 Stemmons
214-634-1320

DATASOUTH COMPUTER CORP
4740 A Dwight Evans Rd
Charlotte, NC 28210
704-523-8500
Contact: Jim Busby
■ Products & Services
Teleprinters
Teleprinters, impact

DATA SPECIALTIES INC
3455 Commercial Av
Northbrook, IL 60062
312-564-1800
Contact: J H Kindsvater Jr
■ Products & Services
Tape, paper
Tape punch/reader, paper
Teleprinters

DATASTREAM COMMUNICATIONS INC
1115 Space Park Dr
Santa Clara, CA 95050
408-727-2980
Contact: Robert Robinson
■ Products & Services
Front-end processors
Modem sharing units
Terminal controllers
Protocol converters
Branch Sales Offices:
AL Huntsville
Gentry Associates
2109 W Clinton Ave
205-534-9771

AZ Scottsdale
BFA Corporation of Arizona
4426 N Saddlebag Trl
602-994-5400

CA Anaheim
Moxon Electronics
1970 South Santa Cruz St
714-635-7600

CA San Diego
Moxon Electronics
8388 Vickers St
714-565-1557

CA Santa Clara
Moxon Electronics
2376 Walsh
408-727-6491

CA Lodi
Moxon Electronics
330 S Fairmont Ave
408-334-1961

CO Denver
BFA Corporation of Arizona
1221 South Clarkson
303-777-8070

CT Danbury
Data-Comm Associates
155 Main St
203-797-8200

FL Ft Lauderdale
Gentry Associates
6289 W Sunrise Blvd
305-791-8405

FL Orlando
Gentry Associates
7527 Currency Dr
305-859-7450

GA Roswell
Gentry Associates
9800 Grimes Bridge Rd
404-998-2828

IL Northbrook
Marketech Associates
425 Huehl Rd
312-291-1220

KS Lenexa
DyTec Distributors, Inc
8245 Nieman
913-888-0215

LA Gretna
Gentry Associates
1799 Stumpf Blvd Bldg 2
504-367-3975

MD Silver Springs
Terminal Networks Inc
1370 Lamerton Dr
301-649-6000

MA Framingham
Data-Comm Associates
22 Aberdeen Rd
617-620-1800

MI Southfield
Data-Tron
17250 W 12 Mile Rd
313-354-6421

MO Maryland Heights
DyTec Distributors, Inc
11657 Adie Rd
314-569-2990

NJ Ridgewood
Instrumentation Sales Co
Box 403
201-445-5210

NM Albuquerque
BFA Corporation of Arizona
1704 Moon NE
505-292-1212

NM Las Cruces
BFA Corporation or Arizona
Box 1237
505-524-9693

NY East Aurora
RG Engineering
67 Reider Rd
716-662-4568

NY Loudenville
RG Engineering
47 Wertman Ln
518-459-5891

NY Rochester
RG Engineering
3000 Winton Rd S
716-442-5631

NC Burlington
Gentry Associates
1336 South Church St
919-227-3639

OH Cincinnati
Data-Tron
7230 Camargo Woods Dr
513-223-8421

OH Wickliffe
Data-Tron
29150 Anderson Rd
216-585-8421

PA Monroeville
Data-Tron
Box 67
412-243-8421

PA Eagleville
Instrumentation Sales Co
Box 176
215-265-5670

SC Greenville
Gentry Associates
Green Gate Park
803-271-8543

TN Rockford
Gentry Associates
2124 Russellwood Dr

TX El Paso
BFA Corporation of Arizona
4120 Rio Bravo
915-542-1762

TX Dallas
Technical Concepts Co
11300 N Central Expwy
214-363-6515

TX Houston
Technical Concepts Co
12851 Jones Rd
713-373-0605

TX San Antonio
Technical Concepts Co
845 Datapoint Dr
512-699-6354

UT Salt Lake City
BFA Corporation of Arizona
140 W 2100 S
801-466-6522

WA Seattle
Distributed Data Products
419 Occidental South
206-625-1565

DATA SWITCH CORPORATION
444 Westport Ave
Norwalk, CT 06851
203-847-9800
Contact: Jack Gaffney
■ Products & Services
Modem sharing units
Port selectors
Technical control centers
DDP systems
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:

CA Oakland
Data Switch Corp
333 Hegenberger Rd
415-562-8564

CA Fullerton
Data Switch Corp
2555 Chapman Ave
714-773-5816

GA Atlanta
Data Switch Corp
1150 Hammond Dr
404-394-9110

IL Oak Brook
Data Switch Corp
1301 West 22nd St
312-986-1997

NJ Medford
Data Switch Corp
520 Stokes Rd, Ironstone Bldg D
609-654-4339

TX Richardson
Data Switch Corp
100 N Central Expwy
214-263-2357

VA Vienna
Data Switch Corp
8133 Leesburg Pike
703-827-8377

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

DATASYSTEMS CORP
8716 Production Ave
San Diego, CA 92121
714-566-5500
Contact: Jim Marshall
■ Products & Services
DDP systems

DATA TECHNOLOGY INC
530 Atlantic Ave
Boston, MA 02210
617-451-0430
Contact: Donald E Skenderian
■ Products & Services
Digital plotters
Graphic display terminals
Interactive terminals
Applications packages
Timesharing/service bureaus

DATA TERMINALS & COMMUNICATIONS
590 Division St
Campbell, CA 95008
408-378-1112
Contact: Linda Griffin-Gold
■ Products & Services
Acoustic couplers
DDP systems
Microcomputer/ microprocessor systems
Cartridges
Disk drives, floppy
Disk drives, large
Data entry terminals
Programmable terminals
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Automatic answering units
Automatic calling units
Branch Sales Offices:

CA Los Angeles
Data Terminals & Communications
1725 W 6 #303
213-483-6878

IN Granger
Data Terminals & Communications
14089 Turtle Dove Ct
219-674-6158

MD Beltsville
Data Terminals & Communications
10401 47th Ave
301-937-6904

ENGLAND
Worrington
Data Terminals & Communications
The Genesis Centre, Birchwood Science Pk
061-7475071

DATATROL INC
Brent Dr
Hudson, MA 01749
617-568-1411
Contact: Howard Cantor
■ Products & Services
Concentrators
Programmable terminals
Interactive terminals
Point of sale terminals
Terminal controllers
Custom programs
Emulation packages
Operating systems
Maintenance organizations
Branch Sales Offices:

CA Larkspur
Datatrol Inc
700 Larkspur Landing
415-461-9114

CO Englewood
Datatrol Inc
5 Denver Tech Ctr
303-741-1380

FL Altamonte Springs
Datatrol Inc
159 Whooping Loop
305-834-0760

NY Roslyn
Datatrol Inc
6 Middle Neck Rd
516-365-7284

RI Pawtucket
Datatrol Inc
100 Armistice Blvd
401-722-3558

TX Plano
Datatrol Inc
520 Central Pkwy
214-422-5933

DATATRONIX INC/ATLANTIC RESEARCH CORP
2100 Reston Ave
Reston, VA 22091
703-620-5300
Contact: William W Follin

DATAVUE CORP
1911 22nd Ave S
Seattle, WA 98144
206-322-9330
Contact: Jerry S Solomon
■ Products & Services
Programmable terminals
Branch Sales Offices:

AZ Scottsdale
Mar Tech Associates
8702 East Rancho Vista Dr
602-994-1285

CA Fountain Valley
MQI Corporation
18381 Bandilier Circle
714-964-4722

CO Denver
Par Associates
10515 E 40th Ave
303-371-4140

MA Wellesley
Onyx New England
554 Washington St
617-237-7743

NJ Ho Ho Kus
Hansen & Hughes
500 Barnett Pl
201-652-7055

OH Chesterland
EQS Electroequipment Sales Inc
8517 Herrick Dr
216-729-2222

TX Dallas
CDS Distributed Systems
15840 Addison Rd
214-934-8040

WA Edmonds
Peripheral Technology
8310 184th St SW
206-322-1747

DATA WEST CORP
7333 E Helm Dr
Scottsdale, AZ 85260
602-948-3280
Contact: James E Buckley
■ Products & Services
Microcomputer/ microprocessor systems
Database processors

DATEC INC
300 East Main St
Carrboro, NC 27510
919-929-2135
Contact: Marianna Partrick
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Branch Sales Offices:

AL Huntsville
Pen Tech Assoc
3322 Memorial Pkwy SW;Holiday Office Ctr
205-881-9298

AK Juneau
Capital Office
Box 529
907-586-2830

AZ Phoenix
American Teledata
4014 East Broadway
602-271-0500

AZ Tucson
American Teledata
6750 N Lachalla
602-297-9617

AR Little Rock
American Teledata
6805-B W 12 St
501-664-1073

CA Long Beach
DCM Assoc
4401 Atlantic Ave
213-438-3400

CA Canoga Park
DCM Southern Office
7009 Owensmouth Ave
213-710-0344

CA El Granado
DCM Northern Office
Box 1192
415-726-6326

CA Milpitas
C & L Terminals Inc
1752 Houret Ct
408-263-9990

CA Los Alamitos
Beerbower and Assoc
3401 Kattella
213-596-3816

CO Denver
Chess Inc
955 Bannock St
303-573-5133

CO Denver
American Teledata
7000 N Broadway;Bldg 2
303-427-2121

CO Colorado Springs
American Teledata
1301 S 8th St
303-473-9823

DC Gaithersburg
Mesa
16021 Industrial Dr
301-948-4350

FL Pinecastle
Vevtec Inc
Box 13947
800-432-2911

FL Miami Lakes
Networks Inc
15291 NW 60th Ave
305-822-6750

FL Deerfield Beach
Pen Tech Assoc
201 SE 15th Terrace
305-421-4989

FL Maitland
Pen Tech Assoc
111 South Maitland Ave
305-645-3444

GA Tucker
Infotec Inc
Box 734
404-934-3299

GA Marietta
Pen Tech Assoc
Cherokee Center;#21, 627 Cherokee St
404-424-1931

GA Decatur
Terminal Equip Maint
316 Church St
404-373-5761

GA Norcross
Atlanta Minicomputers
6649 Peachtree Industrial Blvd
404-448-0900

HI Honolulu
American Teledata
1347 Colburn St
808-848-1469

ID Boise
Bill Leseburg
6363 Plano Dr
208-344-6168

IL Elmhurst
Kalbro
722 N Church Rd
312-279-1960

IL Chicago
Electro-Tech Marketing Assoc
3525 W Peterson Ave
312-588-4535

KS Lenexa
Data Assurance
11842 W85 St
913-888-1770

LA Metairie
American Teledata
2404 Edeborn #A
504-834-1516

MD Gaithersburg
Technical Sales Assoc
19544 Club House Rd
301-258-9790

MA Danvers
J Melanson & Assoc
39 Pine St
617-774-1220

MI Royal Oak
Data Communications Equipment Brokers
4915 Fernlee
313-280-0180

MN Minneapolis
American Teledata
7308 Aspen Lane
612-425-7611

MS Jackson
Keller and Martin
Box 4936;105 Katherine Dr
601-939-9220

MO Hazelwood
Precision Data Products Inc
358 Brooks Dr
314-731-2310

NJ Union
Transnet Corp
2005 Route 22
201-688-7800

NJ Wharton
ADL Entrps
Richard Mine Rd
201-328-1300

NJ Bogota
Qytel
204 Leonia Ave
201-487-7737

NJ Bellmawr
Applied Delta
101 KOR Center East
609-931-3100

NM Albuquerque
American Teledata
5101 NE Copper
505-266-7731

NY Herkimer
Annese & Assoc Inc
Box 127
315-895-7469

NY New York
Qytel
285 Madison Ave
212-889-3888

NY Massapequa
L E Walz and Assoc Inc
128 Rumsom Rd
516-798-3119

NY Rochester
Annese and Assoc
167 Flanders Ave
716-436-3756

NC High Point
Pen Tech Assoc
1202 Eastchester Dr
919-883-9125

NC Raleigh
Fulcrum Computer Group
Box 18305
919-848-0001

NC Charlotte
GLS
4715 Park Rd
704-527-5955

OR Beaverton
American Teledata
7917 SW Nimbus Ave
503-643-9070

OR Beaverton
Data Devices
8295 SW Cirrus
503-641-5500

OR Portland
C & L Terminals Inc
1215 SE Ivon
503-231-0772

PA Pittsburgh
Applied Delta Systems
16 East West Dr
412-931-1960

TX Irving
Noakes
3330 Stovall St
214-255-1151

TX Plano
RTS
620 Haggard
214-424-6526

TX Dallas
American Teledata
10750 N Stemmons Frwy
214-350-1304

TX Dallas
Aftech
11422 Harry Hines Blvd
214-241-3283

TX Arlington
Computer Hardware
2006 Quincey Ct
817-265-3490

TX Arlington
Datec Inc
2504 Clearwood Dr
817-265-7565

TX Houston
Tel-Tex
2825 W 11th St
713-868-6000

TX Houston
Wilson Data Communications
8989 Westheimer
713-531-7170

TX San Antonio
American Teledata
8240 Vicar St
512-657-5881

UT Salt Lake City
American Teledata
230 W 2855 S St
801-467-1545

VA Vienna
Comsel Corp
8453-N Tyco Rd;Tysons Corner
703-734-3880

VA Arlington
Community Computers
2704 N Pershing Dr
703-527-4600

VA Newport News
Atlantic Communications
925 48th St
804-380-8499

WA Bellvue
C & L Terminals
13500 Bellvue Redmond Rd
206-641-6820

WA Spokane
C & L Terminals
West 55 Mission
509-328-9912

WI Menomonee Falls
Apex Systems Inc
N 81 W 12920 Leon Rd
414-251-4142

ONTARIO, CANADA
Markham ONT
Signatel Ltd
89 Telson Rd
416-495-9229

DATOTEK INC
13740 Midway Rd
Dallas, TX 75234
214-233-1030
Contact: Tom Halliburton
■ Products & Services
Data security devices: encoder/decoders
Branch Sales Offices:
CA Encino
King Engineering Co
17333 Rancho St
213-981-8677

MD Bethesda
Warner Assoc Inc
9911 Carter Rd
301-469-8904

ALBERTA, CANADA
Edmonton
Williams Electronics Ltd
11619 147 St
403-455-3858

ONTARIO, CANADA
Markham
Signatel Ltd
89 Telsen Rd
416-495-9229

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

DATUM INC
1363 S State College Blvd
Anaheim, CA 92806
714-533-6333
Contact: David Riley
■ Products & Services
Cartridge drives
Disk drives, large
Tape drives, magnetic
Branch Sales Offices:
IL Des Plaines
Datum Inc
1001 E Touhy Ave
312-296-1064

DAYCO CORP
333 W First St; PO Box 1004
Dayton, OH 45401
513-226-7000
Contact: Les Drayton
■ Products & Services
Ribbons and supplies for terminals and printers
Branch Sales Offices:
OH Dayton
Printing Products Co
333 W First St
513-226-5866
OH Dayton
Plastic Products Div
333 W First St
513-226-5855
OH Dayton
Rubber Products Co
333 W First St
513-226-5911

DCD TELECOMMUNICATIONS
160-162 N Main St
Mansfield, MA 02048
617-339-9503
Contact: E J Patton
■ Products & Services
Message switchers
Multiplexers, statistical (intelligent)
Packet processors
Port selectors
Digital service units
Line drivers
Modems, limited distance
Modem eliminators
MIL 188C adapters
Data entry terminals
Interactive terminals
Terminal controllers
Word processors, communicating
Cables, electrical prefabricated extending
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Protocol converters
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual

DDP SYSTEMS INC
132 W 31st St
NY, NY 10001
212-736-4240
Contact: Gresford Priestley
■ Products & Services
Message switchers
DDP systems
Local networks
Local network interfaces
Minicomputers
Remote job entry terminals
Word processors, communicating
Custom programs
DDP systems software
Emulation packages
Local network software
Personal computer communications software
Word processing packages
Data communications consultants

DEANZA SYSTEMS INC
118 Charcot Ave
San Jose, CA 95131
408-263-7155
Contact: Phil Cleveland
■ Products & Services
Graphic display terminals

DECISION DATA COMPUTER CORP
100 Witmer Rd
Horsham, PA 19044
215-674-3300
Contact: Peter E Hermann
■ Products & Services
Add-on main memory
Batch terminals
Remote line printers
Remote job entry terminals
Branch Sales Offices:
AL Birmingham
Decision Data Computer Corp
300 Vestavia Office Pk
205-979-1800

AZ Phoenix
Decision Data Computer Corp
4040 E McDonald
602-275-0337

AR Little Rock
Decision Data Computer Corp
610 Rock St
501-374-7888

CA Burbank
Decision Data Computer Corp
4405 Riverside Dr
213-843-0512

CA San Diego
Decision Data Computer Corp
Ste E/4433 Convoy St
714-565-6575

CA San Mateo
Decision Data Computer Corp
165 S Amphlett
415-574-7634

CO Denver
Decision Data Computer Corp
3850 E 48th Ave
303-388-4109

CT West Hartford
Decision Data Computer Corp
630 Oakwood Av
203-247-7171

FL N Miami Beach
Decision Data Computer Corp
111 NW 183 St
305-653-1660

FL Orlando
Decision Data Computer Corp
7040 Lake Ellenor Dr
305-859-3494

FL Tampa
Decision Data Computer Corp
5445 Mariner
813-894-3328

GA Atlanta
Decision Data Computer Corp
5600 Roswell Rd NE
404-255-5383

IL Bensenville
Decision Data Computer Corp
205W Grand Ave
312-766-0274

IN Indianapolis
Decision Data Computer Corp
5680 Caito Dr
317-633-4655

KS Shawnee
Decision Data Computer Corp
7451 Switzer Rd
913-831-3663

LA Metairie
Decision Data Computer Corp
3229 36 St
504-838-8801

MI Grand Rapids
Decision Data Computer Corp
3685 Hagen Dr SE
616-247-7679

MN Minneapolis
Decision Data Computer Corp
620 Mendssohn Ave
612-541-9333

MO Maryland Heights
Decision Data Computer Corp
75 Worthington
314-878-0423

NJ Union
Decision Data Computer Corp
1600 Rt 22
201-688-4644

NY Cheektowaga
Decision Data Computer Corp
2520 Union Rd
716-693-8472

NY New York
Decision Data Computer Corp
2 Penn Pl
212-695-4814

NY Rochester
Decision Data Computer Corp
167 Flanders St
716-436-6010

NY Syracuse
Decision Data Computer Corp
3650 James St
315-437-6583

NC Charlotte
Decision Data Computer Corp
501 Archdale Dr
704-525-3034

NC Greensboro
Decision Data Computer Corp
612 Friendship Ctr
803-277-0262

NC Raleigh
Decision Data Computer Corp
7424 Chapel Hill Rd
919-833-5476

OH Cincinnati
Decision Data Computer Corp
11415 Century Blvd
513-671-2300

OH Highland Hts
Decision Data Computer Corp
25 Alpha Park
216-461-1955

OH Columbus
Decision Data Computer Corp
3845 April Ln
614-239-9100

OH Dayton
Decision Data Computer Corp
1250 W Dorothy Lane
513-222-4242

OK Oklahoma City
Decision Data Computer Corp
2528 N Moore Ave
405-799-8471

OK Tulsa
Decision Data Computer Corp
9511 E 46 St
918-622-9610

OR Portland
Decision Data Computer Corp
4614 SW Kelly Ave
503-224-5658

PA Pittsburgh
Decision Data Computer Corp
200 Dinsmore Ave
412-922-1100

RI E Providence
Decision Data Computer Corp
159 Waterman Av
401-438-0014

TN Memphis
Decision Data Computer Corp
2500 Mt Moriah
901-795-7450

TN Nashville
Decision Data Computer Corp
310 Philfre Ct
615-367-2904

TX Irving
Decision Data Computer Corp
2030 Century Ctr Blvd
214-579-9810

TX Ft Worth
Decision Data Computer Corp
5001 Brentwood Stair/Ste 104
817-457-7661

TX Houston
Decision Data Computer Corp
10606 Hempstead Hwy
713-688-5550

UT Salt Lake City
Decision Data Computer Corp
3565 SW Temple
801-266-6772

VA Richmond
Decision Data Computer Corp
2015 Staples Mill Rd
804-745-4370

WA Renton
Decision Data Computer Corp
Evergreen Bldg 15 S Grady Way
206-624-3877

WI Brookfield
Decision Data Computer Corp
14260 W Greenfield Ave
414-784-6540

ONTARIO, CANADA
Downsview
Decision Data Computer Corp
168A Oakdale Rd
416-745-1342

QUEBEC, CANADA
Dollard Des Ormeaux
Decision Data Computer Corp
70A Blvd Brunswick
514-683-2632

QUEBEC, CANADA
Ville Vanier
Decision Data Computer Corp
99 Bisson
418-527-8462

ENGLAND
Staines
Decision Data Computer Corp
48-54 London Road
011-44784-62421

DECITEK CORP
129 Flanders Rd
Westboro, MA 01581
617-366-8334
Contact: Dennis Brown
■ Products & Services
Disk drives, floppy
Tape, paper
Tape punch/reader, pa-
Branch Sales Offices:

CA San Jose
Telemark
826 N Winchester Blvd
408-248-9616

CT Madison
Reptron
32 White Birch Rd
203-245-2242

DC Rockville
Spectro Systems Corp
11445 Beechgrove
301-279-2010

FL Orlando
Physimetrics Inc
999 Woodcock Rd
305-894-8081

GA Atlanta
Physimetrics Inc
6400 Powers Ferry Rd
404-955-0155

IL Chicago
First Rep
9420 W Foster Ave

IL Northbrook
Marketech Associates
425 Huehl Rd
312-291-1220

MI Brighton
A P Associates
9880 E Grand River Ave
313-229-6550

MN Eden Prairie
First Rep
7525 Mitchell Rd
612-944-2096

MO St Louis
Inland Assoc
13100 Manchester Rd
314-821-3742

NY Victor
A & D Devices
626 Fishers Run
716-924-9171

NC Chapel Hill
Physimetrics Inc
41 Cedar Terrace Rd
919-933-7380

OH Cleveland
Geotronix Inc
8180 Brecksville Rd
216-526-2535

OH Columbus
Geotronix Inc
4453 Willowbrook
614-457-8472

OR Portland
Tasco Inc
7764 S W Alden
503-245-8168

SC Orange
MSC
201 S Anita
714-978-0721

TX Dallas
SCI Sales Inc
16990 Dallas Pkwy
214-234-8072

WA Bellevue
Tasco Inc
606-110th Ave NE
206-453-1414

QUEBEC, CANADA
Brossard
Caleg Inc
Box 58
514-861-4615

DEI-TELEPRODUCTS
2128 Vineyard
Escondido, CA 92025
714-743-8344
Contact: Charles R Rose
■ Products & Services
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modem eliminators
Code converters
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Data communications consultants
Branch Sales Offices:

CA Los Angeles
Mark Assoc
8921 S Sepulveda
213-641-1840

CO Arvada
Claredon Co
Box 1205
303-424-2010

GA Dunwoody
Terminals Plug Inc
5180 Meadowlake Dr
404-393-2057

IL Arlington Hts
Rethal Associates
219 W University Dr
312-398-7660

IA Des Moines
The Beams Co
2318 Harding Rd
515-255-1148

KS Shawnee Mission
The Beams Co
11503 West 75th St
913-631-0300

MI Brighton
Reshal Associates
6913 Wide Valley Dr

MN Minneapolis
Reshal Associates
10521 Lake Fall Dr

MO St Louis
The Beams Co
11780 Westline Ind Dr
314-569-1060

NJ Palisades Park
Datanet Inc
120 W Palisades Park Blvd
201-592-6750

TX Irving
Noakes Data Communications
3330 Stovall
214-255-1151

VA Falls Church
Data Comm Sys Corp
252 N Washington SE
703-241-7803

WA Bellevue
Rep Sac Corp
10655 NE 4th Ave
206-451-8600

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

DELTA DATA SYSTEMS
Woodhaven Ind Pk 2595 Metropolitan Dr
Trevose, PA 19047
215-322-5400
Contact: G Ross Bates
■ Products & Services
Disk drives, floppy
Batch terminals
Data entry terminals
Programmable terminals
Remote job entry terminals
Terminal controllers
Video data terminals (KSR)
Word recognition units
Word processors, communicating
Computer/communications interfaces
Maintenance organizations
Branch Sales Offices:

CA Fullerton
Delta Data Systems
2736 W Orangethorpe
714-870-5561

NY New York City
Delta Data Systems
122 E 42 St
212-682-8836

ENGLAND
Hertsfordshire
Delta Data Systems Ltd
Swallowfields Welwyn Garden City
33833

DELTEC CORP
DIV OF GOULD INC
2727 Kurtz St
San Diego, CA 92110
714-291-2411
Contact: Tom Kurtz
■ Products & Services
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:

CA Torrance
Power Specialists Co
3868 Carson St
213-540-0580

CA Santa Clara
Thomas Assoc
460 Aldo Ave
408-988-4484

CO Denver
Barnhill Three
7076 S Alton Way
303-779-3600

GA Atlanta
F-M Assoc
2529 A Skyland Dr
404-634-7830

KS Derby
Palatine Sales
221 W Market St
316-788-0621

MN Excelsiro
Domino Unlimited
3400 Kings Point Rd
219-747-5621

NJ Cherry Hill
Scientific Representatives
496 N Kings Hwy
609-482-0059

NJ Paramus
SDM Representatives
23 N Farview Ave
201-368-0125

OH Chesterland
EQS Systems
Box 445
216-729-4222

TX Richardson
Barnhill Two
1101 Executive Dr
214-231-2573

VA McLean
Creative Marketing Associates
6716 Old McLean Village Rd
710-883-0310

WA Lynnwood
Industrial Electronic Instruments Co
19707 44th Ave W
206-775-3516

AUSTRALIA
Springvale Victoria
Stone Platt Electrical
134 Springvale Rd 3171

EGYPT (UAR)
Cairo
Metro
Box 2466
971336

FRANCE
Paris
Elexo
BP 24 91370 Verrieres Le Buisson
6930.28.80

GERMANY, WEST
Monchengladbach
Ziegler-MeBwerterfassung GMBH & Co
Postfach 510

HONG KONG
Hong Kong
Cable & Wireless Systems Inc
GPO Box 4477
5-283385

ISRAEL
Tel Aviv
Rapac Electronics BV
Box 18053

NETHERLANDS
The Netherlands
Simac Electronics BV
Veenstraat 20
040533725

SINGAPORE
Bukit Timah
The General Electric Co of Singapore Ltd
PO Box 4046
663011

TAIWAN
Taiwan
Tien Sheng Enterprise Co Ltd
Box 30-518 Taipei

DENISON KYBE CORP
132 Calvary St
Waltham, MA 02254
617-899-0012
Contact: Al Black
■ Products & Services
Cassettes
Disks, floppy
Furniture, cabinets, terminal enclosures

Branch Sales Offices:
CA N Hollywood
Dennison Kybe Corp
4101 Lankershim Blvd
213-980-8365
GA Tucker
Dennison Kybe Corp
2175 North Lake Pkwy
404-491-7769
IL Des Plaines
Dennison Kybe Corp
999 East Touhy Ave
312-298-8870
NY New York
Dennison Kybe Corp
1 Penn Pl
212-594-9273

DEST CORP
2380 Bering Dr
San Jose, CA 95131
408-946-7100
Contact: Dianna M Konrad
■ Products & Services
Word recognition units
Branch Sales Offices:
AL Birmingham
CPT of Birmingham Inc
2937-7th Ave S
205-326-6322
CA Orange
Dest Corp
505 City Parkway W, #900
714-978-8055
CA San Francisco
Dest Corp
44 Montgomery, #581
415-391-9254
CO Denver
Business Products Inc
114 Federal
303-922-6136
FL Melbourne
I S A
17 Hibiscus Blvd
305-724-4321
GA Atlanta
Dest Corp
2090 Faulkner Rd
404-633-2551
IL Chicago
Dest Corp
175 W Jackson Blvd
312-427-8677
MA Wellesley
Dest Corp
1 Riverdale Rd
617-235-2394
NY New York
Dest Corp
575 Madison Ave, #1006
212-486-1880
NC Charlotte
Office Systems Inc
1129-100 E Moreland St
704-374-0822
PA Aston
Newcorp Products Inc
45 Commerce Dr
215-485-8180
TX Dallas
Jim Erwin Office Equipment Center
13606 Floyd Rd
214-699-9911
TX Houston
The Data Companies
11777 Katy Frwy
713-493-4281
VA Falls Church
Dest Corp
400 N Washington St, #208
703-534-0501
ONTARIO, CANADA
Toronto
Datamex Ltd
14 Leswyn Rd
416-781-9135
ENGLAND
London
Data Logic Ltd
29 Marylebone Rd
01-486-7288
GERMANY, WEST
5000 Koln 90
CPT Text Computer Vertribes GMBH
Kolner Str 35
02203 5-30-94

DEVELCON ELECTRONICS INC
Swamp Rd, Rt 313
Doylestown, PA 18901
215-348-1900
Contact: David A Kane
■ Products & Services
Concentrators
Line sharing units
Modem sharing units
Port selectors
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
EIA cable testers
Protocol analyzers
Response-time monitors
Cables, electrical prefabricated extending
Switches, data communications: automatic
Branch Sales Offices:
CA Boulder Creek
Develcon Electronics Inc
1050 Kings Hgwy
408-338-6443
CA El Granada
DataComm Marketing
Box 1192
415-726-6326
FL Satellite Beach
Reynolds & Associates Inc
476 N A1A
305-773-4700
FL Fort Lauderdale
Reynolds & Associates Inc
161 SW 75th Ave
305-581-6611
FL St Petersburg
Reynolds & Associates Inc
11405-8th St E
813-360-1484
GA Atlanta
Reynolds & Associates Inc
5057 Vernon Springs Dr
404-393-9113
IL Arlington Hts
Information Systems
2420 Oakton St
312-228-5480
MD Bethesda
Powell & Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535
MA Wakefield
Instrument Dynamics Inc
Lakeside Office Park
617-245-5100
MI Ann Arbor
W C Koepf Associates
2321 Lancashire
313-459-9150
MI Grosse Pointe
W C Koepf Associates
764 Washington
313-459-9150
NH Derry
Develcon Electronics Inc
Box 870
603-434-6699
NJ Fort Lee
Technical Marketing Assoc
2460 Lemoine Ave
201-224-6911
NY Rochester
Cameron Assoc Inc
29 Goodway Dr
716-473-4590
NY Latham
Cameron Associates Inc
Box 239
518-371-5947
NC Winston Salem
Reynolds & Associates Inc
614 First Union Bldg
919-725-6196
OH Chagrin Falls
W C Koepf Assoc
Box 16
216-247-5129
OH Dayton
W C Koepf Assoc
53 Park Ave
513-293-6062
OH Columbus
W C Koepf Assoc
1089 Barberry Ln
614-866-8117
OK Tulsa
Barry Sales
3035 E Skelly Dr
918-749-7775
OR Lake Oswego
Showalter Instruments Inc
503-224-8487
PA Willow Grove
Powell & Pendergraph Inc
801 Easton Rd
215-657-0330
PA Doylestown
Develcon Electronics Inc
200 North St
215-348-1900
PA Pittsburgh
W C Koepf Associates
919 Tropical Ave
412-344-3653
TX Houston
Barry Sales
6400 Westpark
713-784-5860
TX Richardson
Barry Sales
709 Lingco Dr
214-234-0255
VA Richmond
Powell & Pendergraph Inc
Box 29643
804-270-1400
WA Bellevue
Showalter Instruments Inc
1521-130th NE
206-455-4922
WA Richland
Showalter Instruments Inc
509-943-5288
SASKATCHEWAN, CANADA
Saskatoon
Develcon Electronics Ltd
108-103 Street E
306-374-2202

DIABLO SYSTEMS INC A XEROX CO
24500 Industrial Blvd M/S L-104
Hayward, CA 94545
415-786-5000
Contact: Robert Burks
■ Products & Services
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Ribbons and supplies for terminals and printers

Branch Sales Offices:
CA San Jose
Diablo Systems
2025 Gateway Pl
408-286-9424

CA Torrance
Diablo Systems
360 Maple Ave
213-328-0351

IL Barrington
Diablo Systems
South Barrington Rd
312-381-3661

MA Waltham
Diablo Systems
1605 Trapelo Rd
617-890-6400

NJ Parlin
Diablo Systems
1145 Bordentown Ave
201-727-2357

TX Richardson
Diablo Systems
1231 Columbia Dr
214-234-0885

ENGLAND
Surrey
Diablo Systems
20 Broadway, Woking
048-62-71991

FRANCE
Boulogne
Diablo Systems
4 Ave Desfeux
01-621-64-58

GERMANY, WEST
Dusseldorf-Heerdt
Diablo Systems
Heesenstrasse 654-70
11-508-67-79

GERMANY, WEST
Muenchen
Diablo Systems
Riesenfeldstr 75
089-351-70-85

DI-AN CONTROLS INC
944 Dorchester Ave
Boston, MA 02125
617-288-7700
Contact: George Breed
■ Products & Services
Interactive terminals
Teleprinters
Teleprinters, impact

DIGI-DATA CORP
8580 Dorsey Run Rd
Jessup, MD 20794
301-498-0200
Contact: Allen Grams
■ Products & Services
Cartridge drives
Tape drives, magnetic
Teleprinters, impact

Branch Sales Offices:
CA Mt View
Eakins Assoc Inc
999 Independence Ave
415-969-4533

MD Jessup
Digi-Data Corp
8580 Dorsey Run Rd
301-498-0200

MA Waltham
Comark Corp
257 Crescent St
617-894-7000

NY Elmont
Crane & Egert Corp
146 Meacham Av
516-488-2100

NY Rochester
RG Engineering
3100 Monroe Av
716-385-3021

WI Santa Ana
Comark Corporation
1616 South Lyon
714-953-8333

AUSTRIA
Itasca
Comark Corporation
21 West 305 Thorndale
312-773-4473

ENGLAND
Maidenhead Berkshire
Digi-Data Ltd
18 King St
0628 29555

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

DIGILOG BUSINESS SYSTEMS INC
905 Sheehy Drive
Horsham, PA 19044
215-443-8300
Contact: Robert J Cascarino
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Batch terminals
Data entry terminals
Remote job entry terminals
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Applications packages
DDP systems software
Local network software
Personal computer communications software
Word processing packages
Data communications consultants

Branch Sales Offices:
IL Schaumburg
Digilog Business Systems Inc
999 Plaza Dr 400
312-843-1540

DIGILOG INC
Babylon Rd
Horsham, PA 19044
215-672-0800
Contact: Roy D Gemberling
■ Products & Services
Modem sharing units
Line drivers
Modems, limited distance
Modem eliminators
Error rate detectors
Protocol analyzers
Network management centers
Technical control centers
DDP systems
Programmable terminals
Portable data entry terminals
Video data terminals (KSR)
Data access arrangement devices
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: automatic
Switches, data communications: manual
Data communications consultants

Branch Sales Offices:
AL Birmingham
Mid-South Data Industries
2600 Creekview Dr
205-979-4300

AZ Scottsdale
Dennis Grenier
10231 N Scottsdale
602-998-4838

CA Lafayette
Persons & Associates
3717 Mount Diablo
415-284-2912

CA Simi Valley
Kirby & Associates
4565 E Industrial St
805-522-8148

CO Littleton
Dapec Inc
5575 S Sycamore
303-798-6538

FL Miami Lakes
Networks Inc
14560 NW 60th Ave
305-822-6750

IL Chicago
H H Sales Co Inc
2007 N Sedgwick Ave
312-871-8250

KS Shawnee
Atech
Box 3334
913-268-9644

LA Baton Rouge
Alpha Business Systems Inc
4150 S Sherwood Forrest
504-293-0567

MD Ashton
Blackwood & Assoc
17904 Ednor View Terrace
301-895-7469

MA Danvers
John Melanson & Assoc
39 Pine St
617-774-1220

MN Eden Prairie
First Rep Co
6420 Flying Cloud Dr
612-944-2097

MO St Louis
Atech
Box 12444
314-428-7447

NY Ilion
Annese & Assoc Inc
60 Pine St
315-895-7469

NC Research Triangle Park
A B Andrews & Co Inc
Suite I 10 Park Plaza
919-549-0563

OH Rising Sun
Mecom Inc
7033 Sandusky Rd
419-457-3231

PA Newtown
James Fox & Associates
Brownsburg Rd
215-598-3293

TX Dallas
Computer Associates
212 Empire Ctr;8383 Stemmons
214-634-1320

WA Seattle
SJI Corp
5950 6th Ave S
206-763-8981

DIGITAL ASSOCIATES CORP
1039 E Main
Stamford, CT 06902
203-327-9210
Contact: Arthur L Schimel
■ Products & Services
Remote line printers
Computer/communications interfaces
Ribbons and supplies for terminals and printers
Switches, data communications: automatic
Maintenance organizations
Used equipment
Branch Sales Offices:

NY New York
DAC New York
420 Lexington Ave
212-599-2805

DIGITAL COMMUNICATIONS ASSOC INC
135 Technology Pk
Norcross, GA 30092
404-448-1400
Advertising page 34
Contact: James B Lee III
■ Products & Services
Front-end processors
Multiplexers, statistical (intelligent)
Port selectors
Remote network processors
Branch Sales Offices:

AZ Scottsdale
Barnhill Three Inc
7319 E Stetson Dr
602-947-7841

CA N Hollywood
O'Halloran & Associates
10700 Ventura Blvd
213-877-0173

CO Englewood
Barnhill Three Inc
7076 S Alton Way
303-779-3600

CT Norwalk
Datacomm Management Sciences Inc
181 Main St
203-838-7183

DE Norristown
Datacomm Management Sciences Inc
564 Long Meadow Rd
215-539-1217

FL Norcross
Digital Communications Associates Inc
303 Technology Park
404-448-1400

GA Norcross
Technology Marketing Inc
6419 Danbury Ln
404-447-6366

IL Wheeling
Inter Business Corporation
1925 N Milwaukee
312-459-8866

IN Columbus
Gerhard & Associates Inc
1384 Grandview
614-488-9751

KY Columbus
Gerhard & Associates Inc
1384 Grandview
614-488-9751

ME Fairhaven
Data Brain Inc
PO Box 161 11 Ridgecrest
617-994-3944

MD Silver Spring
Terminal Networks
1370 Lamberton Dr
301-649-6000

MA Fairhaven
Data Brain Inc
Box 161
617-994-3944

MI Ann Arbor
Gerhard & Assoc Inc
2211 Jackson Ave
313-996-8077

MN Eden Prairie
First Rep Company
6420 Flying Cloud Dr
612-944-2097

MS Baton Rouge
Barnhill Associates
440 N Foster, #320
504-924-6826

MO Maryland Heights
Dytec South Inc
11657 Adie Rd
314-569-2990

MT Englewood
Barnhill Three Inc
7076 S Alton Way
303-779-3600

NH Fairhaven
Data Brain Inc
Box 161 11 Ridgecrest
617-994-3944

NM Albuquerque
Barnhill Three Inc
1410-D Wyoming NE
505-299-7658

NY Huntington
The Technology Consortium
Box 619
212-549-5880

NY Dewitt
D B Assoc Inc
PO Box 14
315-446-0220

OH Columbus
Gerhard & Assoc Inc
1384 Grandview
614-488-9751

OR Beaverton
Datec Inc
7960 SW Cirrus Dr
503-641-6644

PA Norristown
Datacomm Management Sciences Inc
564 Long Meadow Rd
215-539-1217

PA Columbus
Gerhard & Associates Inc
1384 Grandview
614-488-9751

RI Fairhaven
Data Brain Inc
Box 161 11 Ridgecrest
617-994-3944

TX Richardson
Barnhill Two Inc
1101 Executive Dr E
214-231-2573

TX Austin
Barnhill Two Inc
111 W Anderson Ln #221
512-451-0217

TX Houston
Barnhill Two Inc
10606 Hempstead Hwy
713-688-9971

UT Murray
Barnhill Three Inc
5180 South 300 West
801-262-3000

VT Fairhaven
Data Brain Inc
Box 161
617-994-3944

WA Seattle
Datec Inc
364 Upland Dr
206-575-1470

DIGITAL COMMUNICATIONS CORP
A M/A-COM CO
11717 Exploration Lane
Germantown, MD 20767
301-428-5500
Advertising page 42
Contact: Michael S Friedman
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, time division
Packet processors
Port selectors
Remote network processors
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Local networks
Local network interfaces
Error controllers
Switches, data communications: automatic
Branch Sales Offices:

AL Huntsville
W A Brown Instruments Inc
Box 4560
205-883-8660

AZ Tempe
Qualtech Inc
610 W Broadway
602-967-4655

CA Irvine
Computer Datacom Inc
17767 Mitchell
714-540-6327

CT Stratford
Instrument Dynamics
Foot of Board St
203-378-6019

FL Ft Lauderdale
W A Brown Instruments Inc
961 NW 53rd St
305-776-4800

FL Orlando
W A Brown Instruments Inc
PO Box 513
305-425-5505

FL Melbourne
W A Brown Instruments Inc
PO Box 1406
605-723-0766

GA Atlanta
W A Brown Instruments Inc
3781 NE Expressway
404-455-1035

IL Wheeling
Interbusiness Corp
925 N Milwaukee Ave
312-459-8866

KY Mandeville
W A Brown Instruments Inc
PO Box 786
504-626-9701

MD Bethesda
Powell-Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535

MA Wakefield
Instrument Dynamics Inc
Lakeside Office Park
617-245-5100

MI Ann Arbor
W C Koepf Associates Inc
2321 Lancashire
313-459-9150

NJ Ridgewood
Instrumentation Sales Company Inc
171 E Ridgwood Ave
201-445-5210

NM Albuquerque
Qualtech Inc
130 Louisiana N E
505-255-6100

NC Durham
W A Brown Instruments Inc
828 Glendale Ave
919-682-2383

OH Chagrin Falls
W C Koepf-Associates Inc
68 Olive St
216-247-5129

OH Columbus
W C Koepf Associates Inc
1089 Barberry Ln
614-866-8117

OK Tulsa
Usdata Associates Inc
8313 East 75th St
918-252-9646

PA Pittsburgh
W C Koepf Associates Inc
919 Tropical Ave
412-344-3653

SC Columbia
W A Brown Instruments Inc
1234 Andrew Rd Suite 3
803-798-8070

TN Oak Ridge
W A Brown Instrments Inc
733 Emory Valley Road
615-482-5761

TX Dallas
Usdata Associates Inc
14241 Proton Rd
214-661-9633

TX Austin
Usdata Associates Inc
8701 Shoal Creek Blvd
512-454-3579

TX Houston
Usdata Associates Inc
4120-A Directors Row
713-681-0200

TX El Paso
Qualtech Associates Inc
Box 26125
915-592-2415

VA Richmond
Powell-Pendergraph Inc
2727 Enterprise Pky
804-270-1400

WA Redmond
Control Q Inc
14828 N E 31st Circle
206-881-7473

ONTARIO, CANADA
Scarborough
ROR Assoc Ltd
21 Rolark Dr
416-291-7121

AUSTRALIA
Wellington
Datacom Equipment
89 Courtenay Pl
856-769

DENMARK
Glostrup
Technitron ApS
Smedeland 8
02-969822

ENGLAND
Reading
Network Technology Ltd
Suttons Park Ave
0734-661685

FRANCE
Les Ulis
Interdata
Auvidulis
6-9280131

GERMANY, WEST
Munich
Technitron GmbH
Martin Luther Strasse
089-6924141

ITALY
Milan
Italtel
Piazzale Zavattari 12
02-43882043

JAPAN
Tokyo
Kanematsu Electronics Ltd
23-6 Toranomon 3-Chrome
03-436-9511

MEXICO
Mexico City
Informatica y Telecomunicaciones
Avenida Revoluzion 416
905-277-2965

NETHERLANDS
Den Haag
Intechmij B V
Hoogkarspelstraat 68
070-25-12-12

NEW ZEALAND
Wellington
Datacom Equipment
89 Courtenay Pl
856-769

NORWAY
Kristiansand
Technitron A/S
PO Box 4510
042-31444

SWEDEN
Stockholm
Technitron Sweden AB
Box 49013
08-520-520

SWITZERLAND
Richterswil/Schweiz
Logotron AG
Bergstrasse 43
01-784-2226

TAIWAN
Taipei
Leadmark Industries Co Ltd
Sungkiang Rd
5361157-9

VENEZUELA
Caracas
Transdata C A
Apartado Postal No 51752
330929

Products are listed alphabetically in the **Products & Services Directory, page 7.**

DIGITAL DATACOM INC
27721 Lapaz Rd
Laguna Niguel, CA 92677
714-831-8470
Contact: James Mariner
■ Products & Services
Data content monitors
DDP systems
Cartridge drives
Data entry terminals
Applications packages
Computer/communications interfaces
Branch Sales Offices:

CA Long Beach
CTI Data Systems Inc
3480 E Spring St
213-426-7375

MA Needham
Jim Wild Inc
570 Hillside Ave
617-444-2366

NM Albuquerque
Par Assoc
2610 San Mateo NE
505-881-5000

NY Jericho
J J Wild Inc
400 Jericho Tnpk
516-935-6600

WA Bellevue
DPM Assoc
515-116 Ave NE #101
206-453-9082

DIGITAL DEVELOPMENT CORP
8650 Balboa Av
San Diego, CA 92123
714-278-9920
Contact: J P Lazare
■ Products & Services
Add-on auxilliary memory
Disk drives, large
Branch Sales Offices:

CA San Diego
Digital Dev Corp
8650 Balboa Ave
714-278-9920

CT Greenwich
Digital Dev Corp
Witherell Dr
203-661-8688

IL Des Plains
Digital Dev Corp
960 S River Rd
312-635-8080

TX Richardson
Digital Dev Corp
Box 2482
214-235-5557

ENGLAND
Basingstoke
DDC Ltd
Kingsland Estate
0256-53883

FRANCE
Florence
Digital Development France SARL
3, Place Gustave
686-26-29

DIGITAL EQUIPMENT CORPORATION
129 Parker St;Pk 3-2/M18
Maynard, MA 01754
617-897-5111

■ Products & Services
DDP systems
Minicomputers
Add-on main memory
Cartridges
Cassettes
Cassette drives
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Tape, paper
Tape punch/reader, paper
Badge readers
Bar code readers
Graphic display terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Computer/communications interfaces
Data security devices: software security modules
Used equipment

DIGITAL MICROSYSTEMS
1840 Embarcadero
Oakland, CA 94606
415-532-3686
Contact: Caron Smith
■ Products & Services
DDP systems
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Local network software

Branch Sales Offices:
CA Oakland
Digital Microsystems
1840 Embarcadero
415-532-3686

ENGLAND
London
Digital Microsystems
East Harding St
01-353-1080

DIGITAL PATHWAYS INC.
1060 E Meadow Circle
Palo Alto, CA 94303
415-493-5544
Contact: John Anderson
■ Products & Services
Add-on main memory

Branch Sales Offices:
CA Anaheim
Moxon Electronics
1970 S Santa Cruz St
714-635-7600

IL Rolling Meadows
Sea Inc
1225 Carnegie St #107
312-255-4820

NY Great Neck
Harvey Krasner Associates
87 Water Mill Ln
516-487-0690

DIGITAL PRODUCTS CORP
4021 NE 5th Terrace
Fort Lauderdale, FL 33334
305-564-0521
Contact: Burton Weiss
■ Products & Services
Automatic calling units

DIGITAL SYSTEMS CORP
3 N Main
Walkersville, MD 21793
301-845-4141
Contact: John Laughlin
■ Products & Services
Front-end processors
Multiplexers, statistical (intelligent)
DDP systems
Minicomputers

Branch Sales Offices:
MD Frederick
American Vernier Corp
406 Sagner Ave
301-694-9355

DIGITAL SYSTEMS DIV
DAHLBERG ELECTRONICS INC
14050 21st Ave S
Minneapolis, MN 55441
612-941-1300
Contact: Glen Gauvin
■ Products & Services
Remote network processors
Local network interfaces
Microcomputer/ microprocessor systems
Disk drives, floppy
Code/protocol conversion programs
Computer/communications interfaces

Branch Sales Offices:
PA Erie
Industrial Control Assoc
Box 82
814-453-3590

BELGIUM
Brussels
Rocke Int'l Europe SA
53-55 Rue de L'ete

SWITZERLAND
Zurich
ERNI & Co
Elecktro-Industrie Ch-8306

DIGITECH INDUSTRIES INC
66 Grove St
Ridgefield, CT 06877
203-438-3731
Contact: Lawrence J Kovarovic
■ Products & Services
Data content monitors
Error rate detectors
Protocol analyzers
Response-time monitors
Technical control centers

Branch Sales Offices:
CA Newport Beach
The Helfrich Company
1831 Kings Rd
714-631-2300

FL Satellite Beach
General Technology
596B Sherwood Ave
305-777-1133

IL Skokie
KNE Resources
7840 Lincoln Ave
312-673-5858

MD Linthicum Heights
KD Associates
201 Benton Ave
301-636-1151

MN Minneapolis
RAE Assoc
7317 Cahill Rd
415-938-9577

OH Columbus
Gerhard & Assoc
2228 Fairfax Rd
614-488-9751

ONTARIO, CANADA
Markham
Signatel Ltd
89 Telson Rd
416-495-9229

ENGLAND
Middlesex
Aspen Electronics Ltd
2 Kildare Close

FRANCE
Paris
G W Walton
60 Rue Pierre Charron

DIRECT INC
1279 Lawrence Station Rd
Sunnyvale, CA 94086
408-734-5504
Contact: Stephen Auditore
■ Products & Services
Microcomputer/ microprocessor systems
Data entry terminals
Programmable terminals
Interactive terminals
Word processors, communicating

Branch Sales Offices:
CA Fullerton
Direct Inc
2742 W Orangethorpe Ave
714-879-0520

CT Ridgefield
Direct Inc
415 Main St
203-431-0769

TX Dallas
Direct Inc
13612 Midway Rd
214-239-4771

DMC SYSTEMS INC
2300 Owen St
Santa Clara, CA 95051
408-727-4444
Contact: Beverly H Kingsbury
■ Products & Services
Modem sharing units
DDP systems
Local network interfaces
Microcomputer/ microprocessor systems
Interactive terminals
Point of sale terminals
Teleprinters, impact
Word processing packages

THE DMW GROUP INC
2395 Huron Pkwy
Ann Arbor, MI 48104
313-971-5234
Contact: Mark Brown
■ Products & Services
Applications packages
Custom programs
Data communications consultants
Educational services
Timesharing/service bureaus

Branch Sales Offices:
CA Los Angeles
The DMW Group Inc

CA Santa Clara
The DMW Group Inc

CT Stamford
The DMW Group Inc

DOMINICK TARRICONE & CO
Box 81
Commack, NY 11725
516-543-6579
Contact: Dominick Tarricone
■ Products & Services
Network management centers
Technical control centers
Microcomputer/ microprocessor systems
Custom programs
Computer/communications interfaces
Data communications consultants
Educational services
Maintenance organizations
Network simulation services

DP COMMUNICATIONS
132 W 31st St
NY, NY 10001
212-244-7800
Contact: Gerald Cherfoff
■ Products & Services
Concentrators
Front-end processors
Message switchers
Modem sharing units
Local network interfaces
Microcomputer/ microprocessor systems
Code/protocol conversion programs
Computer/communications interfaces
Data security devices: personal identification systems
Protocol converters
Data communications consultants

DRANETZ ENGINEERING LABS INC
1000 New Durham Rd
Edison, NJ 08817
201-287-3680
Contact: A Orlacchio
■ Products & Services
Electrical-parameters test equipment
Response-time monitors
Power supplies
Selection & transfer equipment: monitor & test switching equipment

Branch Sales Offices:

AL Huntsville
Kemp Instruments
Box 5430
205-837-4304

AZ Scottsdale
Barnhill Assocs Inc
7319 E Stetson Dr
602-947-7841

CA Palo Alto
Coherent Mktg Assocs
1890 Embarcadero Rd
415-856-1167

CA Los Angeles
Ezra Mintz Assocs
8939 S Sepulveda Blvd
213-670-5410

CA San Diego
Ezra Mintz Assocs
7841 Balboa Ave
714-565-4921

CO Englewood
Barnhill Assocs Inc
7076 S Alton Way
303-779-3600

CT Mount Carmel
Scientific Devices-CT
3074 Whitney Ave
203-248-9361

FL Orlando
Datarep
Box 5929
305-843-5224

FL Seminole
Datarep
9261 78th Ave N
813-393-1741

FL Melbourne
Datarep
713 Orange Blossom Dr
305-259-8924

GA Atlanta
Kemp Instruments
5725 Buford Hwy NE
404-452-8050

IL Elk Grove Village
Loren Green Assocs
30 Martin Ln
312-593-0282

IN Indianapolis
Loren Green Assocs
4745 W 71 St
317-293-9827

KS Shawnee
Atech Inc
Box 3334
913-268-9644

LA Lafayette
Kemp Instruments
218 Rue Beauregard
318-269-9452

LA Baton Rouge
Barnhill Assocs Inc
440 N Foster
504-924-6826

MD Rockville
Electronic Mktg Assocs
11716 Parklawn Dr
301-881-5300

MA Waltham
Scientific Devices-NE
181 West St
617-890-2252

MI Farmington
Carter McCormic & Peirce
23995 Freeway Park Dr
313-477-7700

MN Minneapolis
Loren Green Assocs
6225 University Av
612-571-6666

MO St Louis
Atech Inc
PO Box 12444
314-428-7447

NJ Paramus
SDM Representatives
15 Farview Ter
201-368-0123

NM Albuquerque
Barnhill Assocs Inc
1410-D Wyoming NE
505-299-7658

NY Rochester
SDM Representatives
673 Panorama Trail W
716-381-9962

NC Charlotte
Baesel & Assocs
Box 6153
704-375-1044

OH Cleveland
Carter McCormic & Peirce
22650 Lorain Rd
216-779-5100

OH Englewood
Carter McCormic & Peirce
15 Rockridge Rd
513-836-0951

OR Portland
Topp Engr Sales Corp
Box 23986
503-244-7265

PA Plymouth Meeting
Electronic Mktg Assoc
649 W Germantown Pike
215-828-7400

PA Monroeville
Carter McCormic & Peirce
409 Beatty Rd
412-372-4415

TX Austin
Barnhill Assocs Inc
111 W Anderson La
512-451-0217

TX Richardson
Barnhill Assocs Inc
1101 Executive Dr E
214-231-2573

TX Houston
Barnhill Assocs Inc
10606 Hempstead Hwy
713-688-9971

UT Murray
Barnhill Assocs Inc
5180 South 3rd West
801-262-3000

WA Bellevue
Topp Engr Sales Corp
Box 250
206-747-5400

WA Richland
Topp Engr Sales Corp
Box 1327
509-588-4008

ALBERTA, CANADA
Calgary
Associated Test Equip Ltd
4216 12 St NE
403-230-1697

BRITISH COLUMBIA, CANADA
Vancouver
Associated Test Equip Ltd
1037 W Broadway
604-734-2012

ONTARIO, CANADA
Scarborough
Associated Test Equip Ltd
3400 Pharmacy Ave
416-497-2208

ONTARIO, CANADA
Ottawa
Associated Test Equip Ltd
1704 Carling Ave
613-728-3717

QUEBEC, CANADA
Montreal
Associated Test Equip Ltd
3300 Cavendish Blvd
514-481-7783

ARGENTINA
Buenos Aires
Servotron
Belgrano 510
01 306323

AUSTRALIA
Arncliffe
Electrical Equip Ltd
192 Princes Hgwy
597-1155

AUSTRIA
A-2345 Brunn Am Gebirge
Kontron GmbH & Co Kg
Industriestrasse B13
02236/86-6-31

BRAZIL
Sao Paulo
Comercial Goncalves
Av Senador Queiroz 305
227-3564

CHILE
Santiago
Pullen y Juppet Ltda
Av Suecia 143B Casilla 10202
02239912
COLOMBIA
Bogota
Elcam Ltda
Apartado Aereo 53286
256-7583
DENMARK
DK-2850 Naerum
SC Metric A/S
Skodsborgvej 305
02 804200
ENGLAND
London
Euro Electronic Instr Ltd
Twyman House 31 Camden Rd
01-267-2748/9
FINLAND
02101 Espoo 10
Finn Metric OY
PL35
460844
FRANCE
Velizy Villacoublay
Kontron Electronique
BP 99 6 Rue Des Freres; Caudron
946 97 22
GERMANY, WEST
Munich
Kontron Elektronik GMBH
Breslauer Str 2
089 31901-221
GREECE
Athens
E A C
Box 622
01 360-0653
HONG KONG
Hong Kong
Gilman & Co Ltd
Box 56G
05 790-9555
INDIA
Bombay
Motwane Private Ltd
127 Mahatma Gandhi Rd
273845
ISRAEL
Tel Aviv
Eastronics Ltd
Box 39300
475-151
ITALY
Milano 2
Radiel srl
Residenza Degli Archi 22
02 213-3056
JAPAN
Tokyo 100-31
Toyo Corp
Box 5014
03-279-0771
KOREA REP (REP)
Seoul
KDC Corporation
Box 5956
02 738236
KUWAIT
Feheheel
Al-meer Tech Serv Co
Box 46672
918216
MALAYSIA FED OF
Selansor
Wira Kris Engineering Sdn Bhd
#67, Jalan SS 21/37
784379

MEXICO
Mexico 16 DF
Precision Control de Mexico SA
Plan de San Luis 398-B
905-556-4515
NETHERLANDS
The Hague
Hollinda BV
Eisenhowerlaan 112
070 512801
NEW ZEALAND
Auckland
G T S Engrg
Box 9613 New Market
546745
NORTHERN IRELAND
Meath
Euro Electronic Inst Ltd
32 Brews Hill Navan Co
046-23577
NORWAY
Oslo 6
Metric A S
Plogveien 1B
02-28 26 24
PERU
Lima
Raygada Motors SA
Av Arenales 1387
014 716737
PHILIPPINES
Philippines
CELEASCO
Box 7171 Manila Airport
02 888981
PORTUGAL
Lisboa Codex
Rualdo Lda
Rua de S Jose 9A15
019 363725
SAUDI ARABIA
Dammam
Tig-Tesco Intl
Box 647
03 832-2201
SCOTLAND
Fife
Euro Electronic Inst Ltd
Flemington Rd Glenrothes
0592-757228
SINGAPORE
Singapore
Singapore Electronic & Engrg
Sembawang Box 16
257-0211
SOUTH AFRICA
Johannesburg 2001
S'Electronics Pty Ltd
Box 70050 Bryanston
488718
SPAIN
Madrid
EMECO SA
Caidos de la Division Azul 1-F
01 458-0645
SWEDEN
Ostmarksgatan
Ingenjorsfirman Gunnar Petterson AB
S-123 21 FARSTA
08/93 02 80
SWITZERLAND
Zurich
Tectra A G
Dufourstrasse 165
01 539910
SWITZERLAND
Glattbrugg
Weiss Instruments
Box CH-8152
01 8101441/2

TAIWAN
Taipei
Multitech International Corp
977 Min Shen E Rd
768-1232
THAILAND
Bangkok
Teo Hong Ltd Partnership
Box 710
233-1721
VENEZUELA
Caracas
Sumasel CA
Apdo 66584 Las Americas
572-8843

DSG INC
Dept DC-18; 1737 Chestnut St
Philadelphia, PA 19103
215-564-6310
Contact: Don Ostling
■ Products & Services
Ribbons and supplies for terminals and printers

DTSS INCORPORATED
10 Allen St
Hanover, NH 03755
603-643-6600
Contact: Richard A Fivek
■ Products & Services
Response-time monitors
Applications packages
Code/protocol conversion programs
Custom programs
Word processing packages
Educational services
Timesharing/service bureaus
Branch Sales Offices:
CA San Francisco
DTSS Incorporated
425 Market St
415-546-3300

DURANGO SYSTEMS INC
3003 N First St
San Jose, CA 95134
408-946-5000
Contact: Mike Moore
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Add-on auxilliary memory
Batch terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Word processors, communicating
Applications packages
Custom programs
DDP systems software
Operating systems
Word processing packages
Branch Sales Offices:
AL Montgomery
Professional Bus Systems Inc
6482 S Perry St
205-262-6910
AZ Phoenix
Canyon Business Systems
720 W Indian School Rd
602-265-0200
CA Fresno
Lincoln Computer Mgmt Sys
4705 W Santa Ana
209-268-9751
CA San Luis Obispo
Cuesta Systems
3440 Roberto Ct
805-541-4160

CA Laguna Hills
California Business Systems Inc
25283 Cabot Rd
714-581-9560

CA San Jose
Durango Systems
3003 North First Street
408-946-5000

CO Denver
Colorado Bus Systems
7475 Dakin St
303-427-9711

CT Yalesville
OFFIS Corp
300 Church St
203-265-3921

FL Miami
Professional Computer Corp
1515 NW 167th St
305-625-1433

HI Honolulu
Data Solutions HI Inc
738 Kaheka St
808-955-6319

IL Elk Grove Village
Durango Systems Inc
1701 Carmen Dr
312-439-9484

IN Sellersburg
S I Computer Services Inc
110 N Indiana Ave
812-246-3356

KS Wichita
Main Electronics Inc
225 Ida
316-267-3581

LA Morgan City
MC Computer Sales
Box 1786
504-385-2930

MA Framingham
Star Systems Inc
693 Cochituate Rd
617-235-8900

MI Farmington Hills
Central Data Systems Inc
23880 Industrial Pk Dr
313-478-7000

MN Edina
Computer Central
7300 Metro Blvd
612-830-1122

NV Reno
Sierra Office Systems
1325 Air Nature Way
702-786-4037

NJ Cranford
Independent Financial Agents Inc
111 N Ave W
201-276-5220

NM Santa Fe
Benchmark Information Systems
1611 Calle Lorca;Suite B
505-982-5656

NY New York
Interactive Computer Systems
312 E 23 St
212-677-7222

NC Greensboro
ADS Data Systems Inc
Friendship Center Of Pk
919-294-4080

OR Portland
Western Star Business Systems
5520 SW Macadam
503-241-7697

PA King of Prussia
Bus Info Systems
216 Goddard Blvd
215-337-2200

TX Houston
Sunbelt Data Services Inc
5855 Sovereign Dr
716-777-6515

TX Dallas
Falcon Systems
13612 Midway
214-385-1975

UT Salt Lake City
Business Computer Center
1284 South 500 West
801-972-0507

VA Roanoke
Automated Data Systems Inc
3016 Franklin Rd SW
703-344-6818

VA McLean
Simcon Inc
7655 Old Springhouse Rd
703-734-1202

WI Milwaukee
Doyle Data Systems Inc
740 N Plankinton Ave
414-271-5688

ONTARIO, CANADA
Don Mills ON
Norango Computer Systems Inc
801 York Mills Rd
416-449-2761

ARGENTINA
Buenos Aires
Hasler Argentina SAIC
Jose E Uriburu 754 6 Piso
47-9722-3560

COLOMBIA
114 Bogota 1
International Computer Machines
Box 19403
011-57-245-6010

ENGLAND
Egham Surrey TW20 9EY
Computer Ancillaries Ltd
64 High St
011-44-78436455

HONDURAS
Tegucigalpa
Durango Systems Inc
Merinter S de RL

NETHERLANDS
Nijmegen 6503 GC
Computron Nederland BV
Box 6647
011-31-80-562714

PANAMA
Panama 5
Electronico Balboa SA
Aptdo 4929
64-2700

SOUTH AFRICA
Randburg
Tecnetics (Pty) Ltd
Box 56412;Pinegowrie 2123
27-11-789-1211

SPAIN
Madrid
Desktop Data Systems
Serrano 49-2-A Planta
91-275-63-20

SWEDEN
Solna
Juegen Weigle
Swerango AB Backvagen 10
8-7302807

URUGUAY
Montevideo
Guillermo Kraft del Uruguay SA
Av Libertador;Brig Gral
Lavalleja 2083
2-45-88

WEST INDIES
Port of Spain
Mini Computer Acct Ltd
74 Tragarete Rd
62-25362

DYNATECH DATA SYSTEMS
7644 Dynatech Ct
Springfield, VA 22153
703-569-9000
Advertising page 78
Contact: Roland Proulx
■ Products & Services
Modems, limited distance
Modem eliminators
EIA cable testers
Protocol analyzers
Data jacks and plugs
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment

Branch Sales Offices:

AZ Scottsdale
Barnhill Three Inc
7319 E Stetson Dr
602-947-7841

AR Anchorage
John Drew Associates
Box 10-1888
907-345-1900

CA Laguna Hills
Dynatech Data Systems
25251 Paseo de Alicia
714-855-1059

CA Mt View
CSS Telecommunications Inc
2680 Bayshore Frontage Rd
415-964-4335

CA Los Alamitos
CSS Telecommunications Inc
10915 Bloomfield St
213-594-4574

FL Englewood
Barnhill Three Inc
7076 S Alton Way Bldg A
303-779-3600

FL Albuquerque
Barnhill Three Inc
1410D Wyoming NE
505-299-7658

GA Lawrenceville
Dynatech Data Systems
736 Camp Perrin Rd
404-963-1041

IL Bloomingdale
Dynatech Data Systems
113 Fairfield Way
312-351-0666

LA Baton Rouge
Barnhill Associates Inc
440 North Foster
504-924-6826

MA Waltham
CSI Systems Inc
60 Hickory Dr
617-890-0127

MI Ann Arbor
ARC Electronic Assoc
2500 Packard Ave #202
313-973-1133

MN Elk River
Prairie Associates Inc
Box 33
612-441-6190

MO St Louis
Precision Data Products
358 Brooks Dr
314-731-2310

NJ East Orange
Friedman Associates
134 Evergreen Pl
201-673-2500

NJ Bridgewater
Dynatech Data Systems
1425 Frontier Rd
201-560-1970

NM Albuquerque
Barnhill Associates
1410D Wyoming NE
505-299-7658

NY Rochester
RG Engineering
3000 Winton Rd South
716-442-5631

OH Cleveland
ARC Electronic Associates
21330 Center Ridge Rd
216-333-8375

OH Miamisburg
ARC Electronic Assoc
228 Byers Rd
513-859-3040

TX Arlington
Dynatech Data Systems
617 W Main St
817-265-6101

TX Richardson
Barnhill Two Inc
1101 Executive Dr E
214-231-2573

UT Murray
Barnhill Three Inc
5180 S 300 West
801-262-3000

WI Waukesha
Prairie Associates Wisconsin
Box 982
414-544-1141

ONTARIO, CANADA
Scarborough
ATELCO
3400 Pharmacy Ave
416-497-2208

FRANCE
Rungis Cedex
Dynatech Communications
6 Rue des Gemeaux, Silic 131
681-21-21

MEXICO
Datos En Linea SA
Cantu 9-105 Col Anzures
905-531-0329

DYNATECH PACKET TECHNOLOGY
7664-A Fullerton Rd
Springfield, VA 22153
703-569-8531
Contact: K L Damanda
■ Products & Services
Concentrators
Multiplexers, time division
Multiplexers, statistical (intelligent)
Packet processors
Error rate detectors
Protocol analyzers
Local networks
Code converters
Computer/communications interfaces
Protocol converters
Switches, data communications: automatic
Branch Sales Offices:

AZ Scottsdale
Barnhill Associates
7319 East Stetson Dr
602-947-7841

CA Mountain View
CSS
2680 Bayshore Frontage Rd
415-964-4335

CA Los Alamitos
CSS
10915 Bloomfield St
213-594-4574

CO Englewood
Barnhill Associates
7076 S Alton Way
303-779-3600

LA Baton Rouge
Barnhill Associates
440 N Foster
504-924-6826

MA Waltham
CSI Systems Inc
60 Hickory Dr
616-890-0127

MI Ann Arbor
Arc Associates
2500 Packard Ave
313-973-1133

NJ Saddle Brook
L & M Associates
511 Victor St
201-843-8700

NM Albuquerque
Barnhill Associates
1410D Wyoming NE
505-299-7658

NY New York
L & M Associates
175 W 12th St
212-243-6155

OH Cleveland
Arc Associates
21360 Center Ridge Rd
216-333-8375

OH Miamisburg
Arc Associates
228 Byers Rd
513-859-3040

PA Pittsburgh
Arc Associates
160 N Craig St
412-681-8609

TX Richardson
Barnhill Associates
1101 Executive Dr E
214-231-2573

TX Austin
Barnhill Associates
111 West Anderson Ln
512-451-0217

TX Houston
Barnhill Associates
10606 Hempstead Hgwy
713-688-9971

UT Murray
Barnhill Associates
5180 S 300 West
801-262-3000

VA McLean
Creative Marketing
6716 Old McLean Village Dr
703-442-9100

BRITISH COLUMBIA, CANADA
Vancouver
Associated Test Equipment
303-1037 West Broadway
604-734-2012

ONTARIO, CANADA
Scarborough
Associated Test Equipment, Ltd
3400 Pharmacy Ave
416-497-2208

ONTARIO, CANADA
Ottawa
Associated Test Equipment
1704 Carling Ave
613-728-3717

JAPAN
Shinagawa-ku Tokyo, 141
Nihon Dynatech K K
Halifax Trade Center Bldg, 25-5,
Nishi-Gotanda 7-Chrone
03-490-2871

MEXICO
Datos En Linea SA
Cantu 9-105, Col UNZURES
531-03-29

EAO SWITCH CORPORATION
255 Cherry St
Milford, CT 06460
203-877-4577
Contact: George Bracci
Branch Sales Offices:

AL Huntsville
Beacon Electronic Associates Inc
1309 S Memorial Pky
205-881-5031

AZ Scottsdale
Luscombe Engineering Co of Arizona
4424 N Scottsdale Rd 600
602-949-9333

AR Little Rock
Beacon Electronic Associates Inc
13 Echo Point
501-224-5449

CA Pasadena
Luscombe Engineering Co of Los Angeles
22 South Chester Ave
213-684-2000

CA San Diego
Luscombe Engineering of San Diego
2609 Adams Ave
714-295-4300

CA Los Gatos
Luscombe Engineering Co of San Francisco
248 West Main St
408-354-6496

CO Denver
Cleveland Enterprises of Colorado
1602 S Parker Rd
303-751-3252

CT Farmington
Ray Perron and Company Inc
10 Briarwood Rd
203-673-4825

CT Seymour
Ray Perron and Company Inc
Box 226
203-888-4849

FL Clearwater
Beacon Electronic Associates Inc
2280 US 19 North
305-491-1054

FL Ft Lauderdale
Beacon Electronic Associates Inc
880 NW 62nd St
305-491-1054

FL Maitland
Beacon Electronic Associates Inc
235 Maitland Ave
305-647-3498

FL Melbourne
Beacon Electronic Associates Inc
312 South Harbor City Blvd
305-724-8010

GA Atlanta
Beacon Electronic Associates Inc
6135 Barfield Rd
404-256-9640

IL Arlington Heights
Brainard-Wilson Marketing Inc
2400 East Oakton
312-437-2700

IN Carmel
Brainard-Wilson Marketing Inc
597 Industrial Dr
317-844-2800

MD Columbia
Delta III Associates Inc
1000 Century Pl
310-730-4700

MA Newton
Ray Perron and Company Inc
181 Wells Ave
617-969-8100

MI Plymouth
Jay Marketing Associates Inc
763 Wing St
313-459-1200

MN Minneapolis
OEM Electrical Sales Company
2010 East Center Circle
612-559-2448

MO Saint Louis
Mertens Company
9216 Clayton Rd
314-993-6600

NH Dover
Ray Perron and Company
One Elm St
603-742-2321

NJ Englewood
Sprung/Nussbaum Inc
41 Park Pl
201-569-5666

NM Albuquerque
Cleveland Enterprises Inc
6201 South Copper NE
505-265-7893

NY Buffalo
R W Mitscher Company Inc
8555 Main St
716-633-7970

NC Greensboro
Beacon Electronic Associates Inc
207 West Bessemer Ave
919-275-9997

NC Raleigh
Beacon Electronic Associates Inc
3901 Barrett Dr
919-787-0330

OH Menton
Jay Marketing Associates Inc
6101 Andrews Rd #5
216-257-5244

PA Hatboro
Jacobsen Associates
2703 Broadway
215-674-2937

PA Pittsburgh
R W Kneip
157 Sunset Dr
412-823-0169

TN Johnson City
Beacon Electronic Associates Inc
3201 Hanover Dr
615-282-2421

TX Houston
Glidden Electro Equipment Company
7728 Long Point Rd
713-681-1415

TX Dallas
Glidden Electro Equipment Company
10730 Metric Dr
214-341-0610

UT Salt Lake City
Cleveland Enterprises of Colorado
455 East 200 South
801-355-8424

VA Richmond
Delta III Associates Inc
3617 Pinebrook Dr
804-272-2497

WA Seattle
Blum and Associates Inc
2470 Westlake Avenue North
206-285-2590

WI Wauwatosa
Badgerep Inc
8205 Woodland Ave
414-771-1972

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

EASTERN SPECIALTIES CO
287 Northfield Rd Box N181
Northfield, IL 60093
312-446-8780
Contact: Robert Engdahl
■ Products & Services
Paper for terminals
Ribbons and supplies for terminals and printers

Branch Sales Offices:
MD Gaithersburg
Eastern Data Products
467 N Fredericks
301-258-7600

MA Holyoke
Eastern Specialties Co Inc
5 Appleton
413-533-7103

ECONOMICS AND TECHNOLOGY INC
101 Tremont St
Boston, MA 02108
617-423-3780
Contact: Fran McCarthy
■ Products & Services
Data communications consultants
Educational services

Branch Sales Offices:
MA Boston
Economics and Technology, Inc
101 Tremont St
617-423-3780

ECS MICROSYSTEMS
215 Devcon Dr
San Jose, CA 95112
408-286-4200
Contact: Richard Harapat
■ Products & Services
DDP systems
Programmable terminals
Word processors, communicating

Branch Sales Offices:
CA San Jose
ECS Microsystems Inc
215 Devcon Dr
408-286-4200

NJ Englewood Cliffs
ECS Microsystems Inc
333 Sylvan Ave
201-894-0242

TX Dallas
ECS Microsystems Inc
13777 N Central Expwy
214-238-1751

THE EDGE INSTRUMENTS COMPANY
2020 W North Ln
Phoenix, AZ 85021
602-995-0802
Contact: Don Patterson
■ Products & Services
Functional Parameters Test Equipment
Data communications consultants
Educational services

Branch Sales Offices:
AZ Phoenix
PLS Associates Inc
2338 W Royal Palm
602-246-6471

CA Simi Valley
Kirby & Associates
4565 E Industrial St
805-522-8148

CA Lafayette
Persons & Associates
3717 Mount Diablo #105
415-284-2912

CO Denver
PLS Associates Inc
7755 E Quincy Ave T-9
303-773-1218

FL Miami
Network Inc
15291 NW 60th Ave
305-822-6750

IL Chicago
HH Sales Co Inc
2007 N Sedgwick Ave
312-871-8250

IA Marion
First Rep Co
RR#3 Box 643
319-373-1177

KS Shawnee
Atech
Box 3334
913-268-9644

LA Baton Rouge
Alpha Business Systems
5615 Corporate Blvd
504-293-0567

MD Ashton
Blackwood & Associates
17904 Ednor View Terr
301-924-2858

MA Wellesley
Datamart Inc
180 Linden St
617-235-5520

MI Southfield
Mecom Inc
29350 Southfield Rd
313-557-7888

MN Eden Prairie
First Rep Co
6420 Flying Cloud Dr
612-944-2097

MO St Louis
Atech
10270 Page Ave
314-428-7447

NM Albuquerque
PLS Associates Inc
4300 H Silver Ave SE
505-255-2330

NY Herkimer
Annese & Associates
501 W Albany St
315-866-2213

NY Rochester
Annese & Associates
167 Flanders St
716-436-3758

NY Syracuse
Annese & Associates
202 Twin Oaks Dr
315-432-0101
OH Rising Sun
Mecom Inc
7033 Sandusky Rd
419-457-3231
OH Willoughby
Mecom Inc
38927 Gardenside Dr
216-951-7566
PA Newton
James Fox & Assoc
Brownsburg Rd;RD2 Box 139B
215-598-3293
WA Seattle
S J I Corporation
5950 6th Ave
206-763-8981

EDGE TECHNOLOGY
2735 SE Raymond St
Portland, OR 97202
503-231-1057
Contact: Frank M Jones
■ Products & Services
Disk drives, floppy
Floppy disk recorders
Code converters
Protocol converters

EECO INCORPORATED
1601 E Chestnut Av
Santa Ana, CA 92701
714-835-6000
Contact: Steve Wagstaff
■ Products & Services
Tape punch/reader, paper
Switches, data communications: manual
Branch Sales Offices:
AL Huntsville
Montgomery Marketing Inc
12021 S Memorial Pkwy
205-883-9901
AZ Phoenix
Cleveland Enterprises
8900 North Central
602-944-4679
CA Los Altos
Recht Associates
2251 Grant Rd
415-964-6321
CA San Diego
Martek
3255 Wing St
714-223-2631
CA Ventura
Thorson Co
340 S Kellog Ave
805-964-8751
CO Littleton
Lange Sales Inc
5575 S Sycamore
303-795-3600
CT Farmington
Ray Perron
10 Briarwood Rd
203-673-4825
FL Altamonte Springs
Semtronic Assoc Inc
343 Whooping Loop
305-831-8233
IL Elk Grove Village
Oasis Sales
1101 Tonne Rd
312-640-1850
IN Fort Wayne
M/S Sales & Assoc
2100 Goshen Rd
219-484-1904
IN Indianapolis
Beeco
1049 E Michigan St
317-632-4612
LA Baton Rouge
Col-Ins-Co
11814 Coursey Blvd
305-423-7615
MD Rockville
Electronic Marketing Assoc
11716 Parklawn Dr
301-881-5300
MI Farmington Hills
Lowell-Wendt Marketing Co
27650 Farmington Rd
313-553-9800
MN Bloomington
Electronic Sales Agency
8053 Bloomington Frwy
612-884-8291
MO Hazelwood
Palatine Sales Inc
346 Brookes Dr
314-895-4577
NJ Englewood
Tecnimat
500 Grand Ave
201-569-4200
NY Endicott
Tech-Mark Inc
101 Jefferson Av
607-748-7473
OH Aurora
EMA
337 E Garfield Rd
216-562-6104
TX Dallas
Electra Reps Inc
14675 Midway Rd
214-387-3594
WA Seattle
Blair Hirsh Co
4013 Leary NW
206-783-3423
BRITISH COLUMBIA, CANADA
Richmond
Robet Eakin Co
Box 94477
604-271-0610
ONTARIO, CANADA
Rexdale
Frank Eakin Ltd
81 Kelfield St
416-245-3600
ENGLAND
Cambridge
EECO
25 Viking Way
0954-80257

EIP MICROWAVE INC
2731 North First St
San Jose, CA 95031
408-946-5700
Contact: H Lurie
■ Products & Services
Microwave/laser systems
Electrical-parameters test equipment

ELECTRODATA INC
23020 Miles Rd
Bedford Heights, OH 44128
216-663-3333
Contact: Phil Ardire
■ Products & Services
Line sharing units
Modem sharing units
Port sharing units
Modem eliminators
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Cables, electrical prefabricated extending
Computer/communications interfaces
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: manual
Branch Sales Offices:
AL Huntsville
FM Associates Ltd
3322 S Memorial Pkwy
205-536-9990
AZ Phoenix
Zeus Electronics Inc
546 E Portland St
602-253-6101
CA El Granada
DCM
532 Palma
415-726-6326
CA Long Beach
CTI Data Systems
3480 E Spring St
213-426-7375
CO Denver
Zeus Electronics Inc
3333 Quebec St
303-321-6818
CT Wallingford
IMF Sales Associates
200 Mansion Rd
203-265-0215
DC Edgewater
Commart Inc
600 Central
301-261-4344
FL Orlando
FM Associates
5018 Mortier Ave
305-851-5710
GA Atlanta
FM Associates
2060 Peachtree Ind Ct
404-451-2293
IL Wheeling
IBC Data Systems
925 N Milwaukee
312-459-8866
IA Iowa City
Dytec South
Box 2148
319-683-2282
KS Lenexa
Dytec South
8245 Nieman
913-888-0215
MD Edgewater
Commart Inc
3910 West Shore Dr
301-261-4344
MA Wakefield
IMF Sales Associates
Lakeside Office Park
617-245-8900
MI Ann Arbor
ARC Assoc
2500 Packard Ave
313-973-1133
MN Minneapolis
RAE Assoc
7317 Cahill Rd
612-941-3221
MO Maryland Hts
Dytec South
11657 Adie Rd
314-569-2990
NJ Cherry Hill
Megargel/Himmelstein Assoc
2428 Rt 38
609-779-0200

NJ Harrington Pk
Glasgal Communications
103 First St
212-687-2455

NM Albuquerque
Zeus Electronics Inc
310 Val Verde SE
505-256-9831

NY E Syracuse
Ossman Instruments
6666 Old Collomer Rd
315-437-6666

NY New York
Glasgal Communications
521 5th Ave
216-687-2455

NC Ramseur
FM Associates
316 Elam Ave
919-824-2196

OH Rocky River
ARC Assoc
21360 Center Ridge Rd
216-333-8375

OR Portland
Rush S Drake
2130 SW Fifth St
503-224-3145

PA Pittsburgh
ARC Assoc
160 N Craig St
412-681-8609

TX Arlington
Data Devices International
2504 Clearwood Dr
817-261-4253

UT Salt Lake City
Zeus Electronics Inc
1849 W North Temple
801-534-0503

WA Seattle
Rush S Drake
11524 NE 15th St
206-364-8830

FRANCE
Sevres
Tekelec Airtronic
BP No 2
(1) 534-75-35

GERMANY, WEST
Koln
Telonic Industries
Friedrichstrabe 14-16
02203-53001

MALAYSIA FED OF
Kuala Lumpur
Racal Electronics (May) SdnBhd
Fitzpatrick Bldg
486407/482779

SINGAPORE
Racal Electronics (Sing) PteLtd
1&2 Magazine Rd
984211/2230013

SWITZERLAND
Geneva
Interep SA
4 Cours des Bastions
022/208346

ELECTROMAGNETIC SCIENCES INC
125 Technology Park/Atlanta
Norcross, GA 30092
404-447-4224
Contact: Ralph Woodruff
■ Products & Services
Data entry terminals
Portable data entry terminals

Branch Sales Offices:
CA Livermore
McKinney Associates
Livermore Financial Center 1842
Catalina Ct
415-447-5730

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

ELECTRONIC INTERFACE ASSOC INC
38 E 29 St
New York, NY 10016
212-683-9100
Contact: Martin Schuss
■ Products & Services
Custom programs
DDP systems software
Switches, data communications: manual
Data communications consultants

ELECTRO RENT
4209 Vanowen Pl
Burbank, CA 91505
213-843-3131
Contact: Renard J Tarullo
■ Products & Services
Multiplexers, time division
Multiplexers, statistical (intelligent)
Acoustic couplers
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Data content monitors
Error rate detectors
Protocol analyzers
Response-time monitors
RTS emulator
Cassette drives
Disk drives, floppy
Tape drives, magnetic
Batch terminals
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Power supplies
Lease and resale organizations
Used equipment

Branch Sales Offices:
CA Mountain View
Electro Rent Corp
2230 Charleston Rd
415-964-5500

CA Santa Ana
Electro Rent Corp
2800 S Main
714-979-5620

CA Burbank
Electro Rent Corp
4131 Vanowen Pl
213-843-3131

CA San Diego
Electro Rent Corp
5490 Complex Dr
714-571-7905

FL Orlando
Electro Rent Corp
771 Kirkman Rd
305-299-6701

GA Atlanta
Electro Rent Corp
3951 Pleasantdale Rd
404-499-4800

IL Elk Grove
Electro Rent Corp
1699 Elmhurst Rd
312-956-8380

MD Beltsville
Electro Rent Corp
10232 Southard Dr
301-792-0448

MA North Billerica
Electro Rent Corp
12 Republic Rd;Treble Cove Indust Pk
617-273-2165

MI Livonia
Electro Rent Corp
12894 Farmington Rd
313-522-8550

NJ Cedar Grove
Electro Rent Corp
216 Little Falls Rd
201-857-2280

TX Dallas
Electro Rent Corp
12011 Coit Rd
214-387-3703

TX Houston
Electro Rent Corp
3810 Westheimer
713-961-9525

WA Seattle
Electro Rent Corp
859 Industry Dr
206-575-1536

ONTARIO, CANADA
Ontario
Electro Rent Corp
1655 Sismet 7
416-624-6132

ELGAR CORP
8225 Mercury Ct
San Diego, CA 92111
714-565-1155
Advertising page 161
Contact: Ernest R Murillo
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:
AL Huntsville
Pen-Tech Assoc Inc
3322 Memorial Pkwy SW
205-881-9298

AK Anchorage
Windier Company
4241 "B" St
907-276-4393

AZ Tempe
Trembly Assoc
Box 27468
602-967-2058

CA Redondo Beach
Ward/Davis Assoc
2615 Manhattan Beach Blvd
213-973-7772

CA San Diego
Ward/Davis Assoc
7263 Engineer Rd
714-292-1000

CA Escondido
WLB Assoc
19995 Elfin Forest Rd
714-744-1122

CA San Jose
D P Assoc
4010 Moorpark Ave
408-296-1492

CO Wheat Ridge
Emcar Marketing Inc
9730 West 50th Ave
303-424-0108

CT North Haven
Pat Jenks Assoc Inc
52 Washington Ave
203-239-6201

CT Canton Center
D C Porterfield Associates
Box 131
203-693-0451

FL Casselberry
Pen-Tech Assoc Inc
1398 Semoran Blvd
305-645-3444

FL Deerfield Beach
Pen-Tech Assoc Inc
201 SE 15 Tr
305-421-4989

GA Marietta
Pen-Tech Assoc Inc
627 Cherokee St
404-424-1931

IL Arlington Heights
Dytec-Central Inc
315 West University Dr
312-394-3380

IL Indianapolis
Dytec/Central Inc
25 Beachway Dr
317-247-1316

KS Lenexa
Dytec/South Inc
8245 Nieman Rd
913-888-0215

MD Rockville
Electronic Marketing Assoc Inc
11716 Parklawn Dr
301-881-5300

MA Holbrook
McLellan Assoc
Box 328 63 Cedar Hill Rd
617-767-4771

MA Woburn
Pat Jenks Assoc Inc
114 Cummings Pk
617-938-0488

MI Madison Heights
WKM Assoc Inc
345 W Girard
313-588-2300

MN Minneapolis
Berndt Assoc Inc
2738 Winnetka Ave N
612-546-2021

MO Maryland Heights
Dytec/South Inc
11657 Adie Rd
314-569-2990

NM Albuquerque
Trembly Assoc
119 Quincy NE
505-266-8616

NY Great neck
Measurement Tech
159 Northern Blvd
516-482-3500

NY Syracuse
Naco Electronics Corp
Box 276
315-699-2651

NY Utica
Naco Electronics Corp
2631 Edgewood Rd
315-732-1801

NY Fairport
Naco Electronics Corp
6780 Pittsford-Palmyra Rd
716-223-4490

NC High Point
Pen-Tech Assoc Inc
1202 Eastchester Dr
919-883-9125

OH Cleveland
WKM Assoc Inc
16141 Puritas Av
216-267-0445

OH Dayton
WKM Assoc Inc
7913 S Suburban Rd
513-434-7500

OR Portland
Pacific Northwest Electronics
2036 SW 58 Ave
503-292-3505

PA Plymouth Meeting
Electronic Marketing Assoc Inc
649 W Germantown Pike
215-828-7400

PA Pittsburgh
WKM Assoc Inc
90 Clairton Blvd
412-892-2953

TX Dallas
Data Aids Assoc
2880 LBJ Freeway
214-620-1551

TX Houston
Data Aids Assoc
1440 North Loop
713-862-6685

WA Bellevue
Pacific Northwest Electronics
2020 116th N E
206-454-0150

PUERTO RICO
San Juan
Computec Systems Corp
Box 1429
809-781-7880

BRITISH COLUMBIA, CANADA
Vancouver, N
Jerome & Francis Co Ltd
1015 Prospect Ave
604-986-1286

ONTARIO, CANADA
Richmond
Interfax Systems Inc
Box 880
613-838-3187

QUEBEC, CANADA
Montreal
Interfax Systems Inc
2800 Sabourin
514-336-0430

ARGENTINA
1233 Buenos Aries
Iota SACIFIA
Ave San Juan 3047
97-9111

AUSTRIA
Brunn AM Gebirge
Kontron GMBH Und Co KG
Industriestrasse B 13
02236/86/6/31

BAHRAIN
Manama
Almoayyed International
Scientific & Industrial
Techology
No. 2 Almoayyed Bldg Government
Rd
262111

BELGIUM
Brussels
C N Rood S A
Place De Jamblinne De Meux 37
02/735.21.35

BOLIVIA
Santa Cruz
Tecnico Comercial Andino
Casillo 2964
49577

CHILE
Santiago
Coasin Chile Ltda
Cas 14588;Correo 21
82141

CHILE
San Martin Santiago
Montero Y Cia S A C
Av Liberatador Bernardo
O'Higgins

COLOMBIA
Bogota
Ingenieria Electronica Diselec
Av Caracas #37-20
2-85-96-04

COSTA RICA
San Pedro
Electrotecnica SA
Apartado 15
31-11-22

DENMARK
DK-2750 Ballerup
Tage Olsen A/S
Box 225;Ballerup Byrej 222
2-65-81 11

DOMINICAN REPUBLIC
Santo Domingo
Cogram S A
Apartado 901

ECUADOR
Quito
Celco CIA Ltda
Box 4093
546-062

EL SALVADOR
San Salvador
Serinsa de C V
Mistral 909
26-6902

ENGLAND
Middlesex
MPL
Belvedere Works-Bilton Way;Pump
Lane Ind Estate;Hayes UB3 3ND
01-848-9871

ENGLAND
Reading Berks
Wavetek Electronics Ltd
109 Crockhamwell Rd Woodley
Reading 0734 696996

FINLAND
Kauniainen
Oy Findip AB
Teollisuustie 7;Box 34
5052255

FRANCE
Buc
MB Electronique
Rue Fourny-ZAC de BUC BP No 31
956.81.31

GERMANY, WEST
8 Munchen 71
Wavetek Electronics GmbH
Wolfratshauser Strasse 169
089 79-49-50

GERMANY, WEST
8057 Eching B Munich
Kontron Elektronik GMBH
Breslauer Str 2
89 21 88-1

GHANA
Ghana
West Afrika Machinery & Tractor Co
Box 4896 Accra

GREECE
Athens 612
Hellenic Scientific Rep Ltd
11 Vrassida St
711.140/713.154

GUATEMALA
Guatemala City
Guatemala Tecnica SA
Calzada Aguilar Batres 38-56
48-1002

INDIA
New Delhi
Indian Avitronics
10 Hailey Rd
44301

INDONESIA
Jakarta Selatan
P T Indoplano
Box 424/KBY
42796

IRAQ
Baghada
Iraqi News Agency
Abu Nawas Street Box 3084 SA' Adoun

ISRAEL
Tel Aviv
Racom Electronics Co Ltd
Box 21120
03-453151

ISRAEL
Tel-Aviv
E & M Engineering Ltd
15 Rothschild Blvd
653848

ITALY
Milano
Sistrel SPA
Via Pelizza da Velpedo 59
6181893

ITALY
Rome
Sistrel SpA
Via Guiseppe Armellini 37
5915551

JAPAN
Tokyo
Toyo Corp
Box 5014;Tokyo International
279 0771

JAPAN
Minato-Ku Tokyo 107
Communication Science Corporation
Hazama Building, 5-8, 2-Chrome, Kita-Aoyama

KOREA REP (REP)
Seoul
Saetong Trading Co Ltd
Box 3590
72-0619

LEBANON
Beirut
Computer Information Systems
Box 11-6274
265629

LIBERIA
Monrovia
Horst Thimmig Industrial Engineering
Box 1444
22797

MALAYSIA FED OF
Singapore 9012
Rank O'Connors Singapore Pte Ltd
PO Box 615
637944

MEXICO
Mexico 12
Mexitek SA
Eugenia 408 Deptos 2 y 3;APDO Postal 1012
905 536-09-10

MEXICO
Mexico 10
Solvimex
562-9882;562-9026

NETHERLANDS
Rijswijk 2100
C N Rood B V
11-13 Cort Van der Lindenstraat
070-99-63-60

NETHERLANDS ANTILLES
Curacao
Industrial Electronics (ANT) NV
Centro Comercial Antilia 1
37201/02

NIGERIA
Lagos
Earth Sciences Ltd
Box 6352
43233

NIGERIA
Ibadan
Joint Komputer Konsultancy Ltd
21 Ondo St; Box 9087-Bodija Estate

NORWAY
Norway
Teleinstrument AB
Box 134;1371 Asker
02-78-94 60

PERU
Lima 14
Telecommunicationes Computacion Control S A
Los Geranios 311
224007

PHILIPPINES
Makati
Cardinal Electronics Corp
201 Salcedo St
88-24-78/88-70-97

PORTUGAL
Lisbon
Financeira Docomercio Exterior SARL
Avenieda Da Liberdade 190-4
54-99-73

SAUDI ARABIA
Jeddah
Bugshan Corp
Box 5880
642-6993

SOUTH AFRICA
Transvaal
Biowave Electronics Pty Ltd
Box 782502;Sandton 2146
783-5400

SPAIN
Madrid
Hispano Electronics S A
Poligono Industrial Urtinas-Alcoron Apartado de Correos 48
619 4108

SWEDEN
Vallingby
Teleinstrument AB
Box 490 Maltesholmsvagen 138
08/38/03 70

SWITZERLAND
Zurich
Precitek Electronic AG
Barnhofstrasse 358b
01-844-29 50

TAIWAN
Taipei
Don Business Corp
Box 36329
5817623/5712911

TAIWAN
Taipei
Taiuniversal Enterprises Co Ltd
Box 26-116
706-2455

THAILAND
Bangkok-11
Dynamic Supply Engineering ROP
#56 Ekami;Sukhumvit 63
3914434/3928532

TURKEY
Yenisehir-Ankara
Tifa Electronics
Box 3
17 6 57/27 37 27

VENEZUELA
Caracas 106
Teva
Apartado 60.656
61-56-58/61-87-51

VENEZUELA
Caracas
Sanchez & Cia, S A
Av Roosevelt-Prado de Mria

EMERGENCY POWER ENGINEERING INC.
3595 Cadillac Ave.
Costa Mesa, CA 92626
714-557-1636
Contact: Warren Caves
■ Products & Services
Power Distribution-Regulation
Power supplies
Uninterruptible power supplies, line correctors, etc

EMERSON INDUSTRIAL CONTROLS DIV
3300 S Standard St
Santa Ana, CA 92702
714-545-5585
Contact: Frank R Chandler
■ Products & Services
Tape drives, magnetic
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:

CA Santa Ana
Emerson Ind Controls Div
3300 S Standard
714-545-5585

CT Madison
Emerson Ind Controls Div
46 Fawn Brook Circle
203-878-9311

GA Griffin
Emerson Ind Controls Div
121 S 6th St
404-228-1871

MO St Ann
Emerson Ind Controls Div
11037 Easy St
314-291-4535

NJ Englewood
Emerson Ind Controls Div
616 Palisade Ave
201-568-0780

NC Charlotte
Emerson Ind Controls Div
4801 East Independence
704-568-5525

NC Raleigh
Emerson Ind Controls Div
Box 95066
919-876-9224

OH Perrysburg
Emerson Ind Controls Div
136 W South Boundary St
419-874-2223

OH Cleveland
Emerson Ind Controls Div
6500 Pearl Rd
216-886-5144

PA Bala Cynwyd
Emerson Ind Controls Div
One Bala Ave
215-668-8601

TX Richardson
Emerson Ind Controls Div
324 N Central Expwy
214-783-1831

VA Waynesboro
Emerson Ind Controls Div
Box 1303
703-943-3707

WA Federal Way
Emerson Ind Controls Div
Box 3827
206-952-5423

EMULEX CORP
2001 E Deere Ave
Santa Ana, CA 92705
■ Products & Services
Terminal controllers
Branch Sales Offices:

CA N Hollywood
Western Scientific Mktg
1952 N Cahuenga
213-628-8023

CA San Jose
Datarep
97 Boston Ave
408-279-1212

CA San Diego
Western Scientific Mktg
5402 Ruffin Rd
714-565-6699

CO Denver
Electrodyne Inc
4600 E Asbury Circle
303-759-4409

DC Linthicum Heights
K D Associates
201 Benton Ave
301-636-1151

FL Satellite Beach
Reynolds & Associates
476 N Ala
305-773-4700

MN St Paul
Applied Tech Sales
986 North Dale
612-488-1129

NH Nashua
Pall Associates
22 Wellesley Rd
603-883-2066

OH Rising Sun
Mecom Inc
7033 Sandusky Rd

TX Austin
System Tech Associates
7115 Burnet Rd
512-415-2018

TX Houston
System Tech Associates
15111 Mintz Lane
713-440-8340

TX Dallas
System Tech Associates
11325 Pegasus St
214-343-0845

WA Seattle
E S Chase Company
5950 6th Ave South
206-762-4824

EMULOG INC
3730 Yale Way
Fremont, CA 94538
415-490-1290
Contact: Christopher Ryan
■ Products & Services
Data entry terminals
Interactive terminals
Video data terminals (KSR)

ENA DATASYSTEMS INC
268 Galaxy Blvd.
Rexdale, ON M9W 5R8
Canada
416-675-3304
Contact: Scott Hepburn
■ Products & Services
Concentrators
Message switchers
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, statistical (intelligent)
Multiplexers, group band
Packet processors
Port selectors
Port sharing units
Acoustic couplers
Digital service units
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Data content monitors
Network management centers
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Data communications consultants

ENGINEERED DATA PRODUCTS
470 E 76 Ave
Denver, CO 80229
303-289-4676
Contact: Ed Folga
■ Products & Services
Furniture, cabinets, terminal enclosures

ENGINEERED SYSTEMS INC
14775 Grover St
Omaha, NE 68144
402-333-0100
Contact: John Martin
■ Products & Services
Concentrators
Message switchers
Packet processors
Network management centers
Minicomputers
Audio response units
Emulation packages
Automatic answering units
Computer/communications interfaces

ENVAX CORPORATION
1401 Walnut Hill Lane
Irving, TX 75062
214-659-3800
Contact: Bill Thomas
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Electronic mailboxes
Data entry terminals
Remote job entry terminals
Teleprinters
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Word processors, communicating
Local network software
Code converters
Computer/communications interfaces
Data access arrangement devices
Data communications consultants
Lease and resale organizations
Maintenance organizations
Used equipment

EPICOM INC
592 N Douglas Ave
Altamonte Springs, FL 32701
305-869-5000
Advertising page 85
Contact: Vito Bassi
■ Products & Services
MIL 188C adapters
Data content monitors
Electrical-parameters test equipment
Error rate detectors
Technical control centers
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: manual
Branch Sales Offices:

CA Los Gatos
EPICOM Inc
17465 Shelburne Way
408-395-4100

CA Brea
X-ON Data Inc
371 Oak Place Unit E
714-671-1966

CO Aurora
Data Devices International
11475 E Vassar Dr
303-695-4835

FL Orlando
FM Associates Ltd
5018 Mortier Ave
305-851-5710

FL Jupiter
FM Associates Ltd
110 Yacht Club Pl
305-746-2996

IA Kalona
Target Technology
Box 45
319-683-2276

MA Woburn
EPICOM Inc
155 New Boston St
617-933-3688

MI Ann Arbor
W C Koepf Assoc
2321 Lancashire
313-459-9150

MO St Louis
Tetley's Data Services Inc
1906 Stillwater
314-423-8646

NJ New York
Epicom Inc
2 Penn Plaza
212-279-1919

NJ Howell
EPICOM Inc
16 Underhill Rd
201-364-5799

NM Albuquerque
Data Handling Co Inc
3105 San Perdo NE
505-884-0284

NY Scottsdale
EPICOM Inc
Box 4578
602-990-1136

OH Chagrin Falls
W C Koepf Assoc
68 Olive St
216-247-5129

OH Spring Valley
W C Koepf Assoc
1245 Night Hawk Trail
513-733-8555

PA King of Prussia
J E Cuesta & Co Inc
570 DeKalb
215-265-5800

TN Memphis
Insight Sales & Distributing Co
2899 Southway
901-345-0145

VA Falls Church
DCS Corp
252 N Washington St
703-241-7803

WA Redmond
Control Q
14828 N E 31 Circle
206-881-1998

ONTARIO, CANADA
Ottawa
Comtest Communications Products Ltd
80 Connade Rd
613-226-2301

AUSTRALIA
Victoria 3133
The Dindima Group Pty Ltd
Box 106, Vermont
61-3-873-4455

DENMARK
Copenhagen
Aage Hempel International A/S
Havnegade 39
01-126767

ENGLAND
Surrey
Master Systems (Data Products) Ltd
100 Park St Camberley
0276-28527

FRANCE
Montebello
EPICOM Inc
PB 23-9 Allee Des Hetres
333-946-6141

GERMANY, WEST
Neu-Isemburg
Racal-Milgo GMBH
Hans-Boeckler-Str 11
06102-2055

INDIA
Bombay 400-018
Hind Ind & Merc Corp Private Ltd
205A Dr Annie Besant Rd
373544

ISRAEL
Tel Aviv
Bitcom Agencies Ltd
Devorah Hanviah St
416-292-1475

ITALY
Milano
Elesys SRL
Via Donati 6, 20146
02-4239920

JAPAN
Tokyo
Sumitomo Corp
2-2 Hitotsubashi
1-chome;Chiyoda-Ku
03-217-6340

MEXICO
Mexico 17 DF
Transdata SA
Mar Jonico 50-B
903-399-9800

NETHERLANDS
Den Haag
Intechmij B V
Hoogkarspel Straat 68
0-70-251212

NEW ZEALAND
Wellington
High-Tech
Box 1980
845-454

SOUTH AFRICA
Fordsburg
Spescom Ltd
11 Central Rd
011-8347551

SWEDEN
Sundbyberg
Heath & Co AB
Loetsjoevaegen 17-19
08-289480

SWITZERLAND
Lausanne
Nucletron SA
11, Ch G de Prangins;CH 1004
021-252423

TAIWAN
Taipei
Syscom Computer Engineering
Box 48-130
02-702-6284

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

EPSON AMERICA
3415 Kashira St
Torrance, CA 90505
213-539-9140
Contact: Kari Westlake
■ Products & Services
Teleprinters, non-impact
Branch Sales Offices:

CA Sausalito
Epson-San Francisco
1 Gate 6th Rd
415-332-5891

NY Great Neck
Epson America Inc
98 Cutter Mill Rd
516-487-0660

TX Irving
Epson-Dallas
2030 Century Blvd
214-579-0927

ESE LTD, SUBSIDIARY OF CODEX CORP
1870 Albion Rd
Rexdale, Ontario M9V 1C1
Canada
416-749-2271
Contact: Charles Murphy
■ Products & Services
Front-end processors
Line sharing units
Message switchers
Modem sharing units
Inverse multiplexers
Multiplexers, statistical (intelligent)
Multiplexers, group band
Packet processors
Port selectors
Port sharing units
Remote network processors
Line drivers
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
MIL 188C adapters
Data content monitors
Error rate detectors
Protocol analyzers
Network management centers
Technical control centers
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Terminal controllers
Word processors, communicating
Custom programs
DDP systems software
Emulation packages
Operating systems
Personal computer communications software
Teleprocessing monitors
Word processing packages
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data access arrangement devices
Data jacks and plugs
Data security devices: encoder/decoders
Protocol converters
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Voice digitizers
Data communications consultants
Used equipment
Branch Sales Offices:

ALBERTA, CANADA
Calgary
ESE Limited
1809 First St NE T2E 7P2
403-230-5386

ONTARIO, CANADA
Ottawa
ESE Limited
428 Cooper St K2P OH2
613-236-7499
QUEBEC, CANADA
Montreal
ESE Limited
560 Henri Bovrassa 204
514-332-5507

ESP DIGITAL SYSTEMS CORP
4600 SW 9th St
Des Moines, IA 50315
515-287-2578
Advertising page 82
Contact: Reed Prior
■ Products & Services
Data content monitors
Error rate detectors
Protocol analyzers
Response-time monitors
Technical control centers
Custom programs
Network simulation services

ESTERLINE ANGUS INSTRUMENT CORP
PO Box 24000
Indianapolis, IN 46224
317-244-7611
Contact: R Cox
■ Products & Services
Front-end processors
Multiplexers, group band
Database processors
Power supplies
Branch Sales Offices:
CA Walnut
Esterline Angus
329 Paseo Sonrisa
714-594-5721
CA Hayward
Esterline Angus
3401 Investment Blvd #8
415-785-8232
IL Elmhurst
Esterline Angus
188 Industrial Dr
312-833-4410
MA Framingham
Esterline Angus
223 Walnut St
617-235-5343
NJ Paramus
Esterline Angus
11 MacKay Ave
201-368-0666
PA Spring House
Esterline Angus
Gwynedd Plaza
215-628-4211
TX Houston
Esterline Angus
10161 Harwin
713-270-8000

E-SYSTEMS INC
ECI DIV
1501 72nd St N
St Petersburg, FL 33733
813-381-2000
Contact: Kenneth L Carlson
■ Products & Services
Front-end processors
Multiplexers, frequency division
Packet processors
Digitized-voice processors
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Data entry terminals
Digital plotters
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Voice digitizers

E-SYSTEMS INC
GARLAND DIV
1200 Jupiter Rd
Garland, TX 75040
214-272-0515
Contact: Charles Hatton
■ Products & Services
Digital service units
Digitized-voice processors
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Facsimile terminals
Graphic display terminals
Programmable terminals
Voice digitizers
Branch Sales Offices:
CA Van Nuys
E-Systems Inc
5430 Van Nuys Blvd
213-986-9963
FL Ft Walton Beach
Focoin Inc
233 Yacht Club Dr NE
904-243-0127
GA Warner Robins
E-Systems Inc
Drawer ii
912-923-3616
MA Lexington
E-Systems Inc
9 Meriam St
617-861-9050
MO St Louis
E-Systems Inc
11933 Westline Indus Dr
314-576-1770
NJ Tinton Falls
E-Systems Inc
776 Shrewsbury Av
201-747-3101
NY Rome
E-Systems Inc
Box 767
315-336-1911
OH Dayton
E-Systems Inc
Box 3034
513-254-8464
OK Oklahoma City
E-Systems Inc
Box 15420
405-737-7610
VA Arlington
E-Systems Inc
1901 N Moore St
703-524-2310
VA Hampton
E-Systems Inc
Box K Riverdale Sta
804-838-2010

BELGIUM
Brussels
E-Systems Inc
Box 2 Ave de Colombie 10
672-2320
JAPAN
Tokyo
E-Systems Inc
Room 401 Tanaka Bldg 1-15-4
Nishi Azabu Minato-Ku
03-402-1367

EVANS & SUTHERLAND COMPUTER CORP
580 Arapeen Dr
Salt Lake City, UT 84108
801-582-5847
Contact: James F Callan
■ Products & Services
Interactive terminals
Branch Sales Offices:
CA Irvine
Evans & Sutherland Computer Corp
18552 MacArthur Blvd
714-752-0952
CT Farmington
Evans & Sutherland Computer Corp
10 Talcott Notch Rd
203-674-0148
IL Addison
Evans & Sutherland Computer Corp
221 E Lake St
312-941-1312
MD Glen Burnie
Evans & Sutherland Computer Corp
300 Hospital Dr
301-760-8353
MA Framingham
Evans & Sutherland Computer Corp
1000 Worcester Rd
617-872-4911
MI Southfield
Evans & Sutherland Computer Corp
29563 Northwestern Hwy
313-353-7447
PA Newtown
Evans & Sutherland Computer Corp
547 East Washington Ave
215-968-8705
TX Dallas
Evans & Sutherland Computer Corp
7616 LBJ Frwy
214-386-4365
TX Woodlands
Evans & Sutherland Computer Corp
2203 Timerloch Pl
713-367-5552
UT Salt Lake City
Evans & Sutherland Computer Corp
580 Arapeen Dr
801-582-5847
WA Bellevue
Evans & Sutherland Computer Corp
301 116th Ave
206-454-9682
AUSTRALIA
Milsons Point
Techway
61 Lavender St
GERMANY, WEST
Nordenstadt
Evans & Sutherland Computer Corp
Mecklenburger Str 42 6200
Wiesbaden
011-49 6122 4659
GERMANY, WEST
D-8011 Riethofen/Pastetten
Evans & Sutherland Computer Corp
Erdinger Str 7
08124

JAPAN
Tokyo
Evans & Sutherland Computer Corp
1-26-2 Nishishinjuku Shinjuku-Ku
160 345-1411

EXACT SYSTEMS AND PROGRAMMING CORP
Box 115
Thornwood, NY 10594
914-948-4913
Contact: F Jeanne Oswald
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Database processors
Word processors, communicating
Word processing packages
Data security devices: software security modules

EX-CELL-O REMEX DIV
PO Box C-19533
Irvine, CA 92713
714-957-0039
Advertising page 107
Contact: Rich McGowan
■ Products & Services
Disk drives, floppy
Tape, paper
Tape punch/reader, paper
Computer/communications interfaces
Branch Sales Offices:

AL Huntsville
Gentry Assoc
2109 W Clinton
205-534-9771

AZ Phoenix
IPC
Box 10124
602-246-8487

CA Santa Clara
Moxon Elect
2376 Walsh Ave
408-727-6491

CA Anaheim
Moxon Elect
1970 S Santa Cruz
714-635-7600

CA San Diego
Moxon Elect
958 Black Mt Rd
714-578-5760

CA Los Gatos
Remex
409 Alberto Way
408-356-4141

CA Irvine
Ex-Cell-O, Remex Div
1733 Alton St
714-957-0039

CO Englewood
Data Systems Mktg
14 Iverness Dr
303-770-1972

CT Manchester
Victor Assoc
Box 568
203-646-6448

FL Orlando
Gentry Assoc
7527 Currency Dr
305-859-7450

FL Fort Lauderdale
Gentry Assoc
6289 W Sunrise Blvd
305-791-8405

GA Roswell
Gentry Assoc
9800 Grimes Bridge
404-998-2828

IL Rolling Meadows
S E A Inc
1225 Carnegie St
312-255-4820

IL Bensenville
Remex
1236 Mark St
312-595-5310

IN Carmel
S-E-A Inc
624 B So Range Line Rd
317-846-2591

KS Mission
Vertec Assoc
5801 Outlook
913-677-3200

MD Silver Springs
L G White
1751 Elton Rd
301-434-1555

MA Southboro
Victor Assoc
304 Turnpike Rd
617-481-4010

MA Springfield
Remex
1188 Parker St
413-739-0669

MI Milford
Milford Scientific
Box 400
313-685-8912

MN Minneapolis
S-E-A Inc
7601 N Kentucky Ave
612-425-4455

MO Chesterfield
Vertec Assoc
263 The Village
314-394-6242

NJ Ridgewood
Hansen and Hughes
Box 806
201-652-7055

NM Albuquerque
IPC
418 Louisiana SE
505-256-3561

NY Rochester
Ossmann Instr
130 Allens Creek Rd
716-473-5720

NY E Syracuse
Ossmann Instr
6666 Old Collamer Rd
315-437-6666

NY Vestal
Ossmann Instr
300 Main St
607-785-9947

NC Burlington
Gentry Assoc
1336 So Church St
919-227-3639

OH Dayton
Boco
1329 Stanley Ave
513-224-0220

OR Portland
Drake Assoc
Box 8009
503-224-3145

PA Ambler
DENCO
25 Skippack Pike
215-542-9876

SC Greenville
Gentry Assoc
Greengate Park
803-271-8543

TX Austin
US Data
8701 Shoal Creek Blvd
512-454-3579

TX Dallas
US Data
14241 Proton Rd
214-661-9633

TX Houston
US Data
4120A Directors Row
713-681-0200

TX Plano
Remex
520 N Central Pkwy
214-424-7539

UT Salt Lake City
Data Systems Mktg
1864 S State St
801-487-8281

WA Seattle
Drake Assoc
11524B 15th Ave NE
206-364-8830

WI Brookfield
S-E-A Inc
675 N Brookfield Rd
414-784-9379

BRITISH COLUMBIA, CANADA
Vancouver
Tracan W Ltd
1144 Millstream Rd
604-926-3411

ONTARIO, CANADA
Ottawa
Tracan Elect Corp
376 Churchill Ave
613-722-7667

ONTARIO, CANADA
Mississauga
Tracan Elect Corp
1200 Aerowood Dr
416-625-7752

QUEBEC, CANADA
Pointe Claire
Tracan Elect Corp
6600 Transcanada Hwy
514-694-5343

AUSTRALIA
Clayton, Victoria
Kenelec Pty Ltd
48 Henderson Rd
03-560-1011

ENGLAND
Reading
Sintrom Ellinor Ltd
14 Arkwright Rd
0734-85464

ENGLAND
Slough
X-Data Ltd
Marsh Wharf, St Marys Rd
0753-49117

FRANCE
Velizy-Villacoublay
Systems Industries
10, Impasse Latecoere
946.96.63

FRANCE
Neuilly-Sur-Seine
Technology Resources SA
27-29, Rue Des Poissonniers
747-4717

GERMANY, WEST
Frankfurt
Nord Micro AG
Victor-Slotosch St 20
06194-3031

ISRAEL
Tel-Aviv
Airtronic Engineering Ltd
Box 18084
ITALY
Torino
Microtecnica
147 Via Madama Cristina
011-696-3024
ITALY
Cinisello Balsamo
Comprel SRL
Viale Romagna, 1
02-61.20.641
JAPAN
Tokyo
KRK Ltd
Otemachi, Chiyoda-Ku
244-3511
NEW ZEALAND
Auckland, 1
David Reid
Box 2630
499-197
SPAIN
Barcelona
Genva Aparatos Electronicos
Calle Escipion 41/43
SWEDEN
Stockholm
Scantele AB
Rosenlundsgatan 52
24 58 25
SWITZERLAND
Wil
Data Care Ltd
Untere Bahnhofstrasse 19
073-22-05-92

EXIDE ELECTRONICS CORP
2 Penn Center Plaza
Philadelphia, PA 19102
215-422-4000
Contact: Rick Brotherton
■ Products & Services
Electrical-parameters test equipment
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
CA Burlingame
Western Dist
851 Burlway Rd
415-348-4287
GA College Park
Southeast Dist
1568 Willingham Dr
404-768-4022
NJ Madison
Northeast Dist
33 Kings Rd
201-377-8594
NC Raleigh
Mid Atlantic Dist
3301 Spring Forest Rd
919-872-3020
PA Philadelphia
Mid-Eastern Dist
2 Penn Center Plaza
215-422-4090
TX Dallas
Southwest/Mountain States Dist
14001 Goldmark
214-690-4567

EXTEL CORP.
3005 MacArthur Blvd
Northbrook, IL 60062
312-291-2550
Contact: James C Dalis
■ Products & Services
Tape punch/reader, paper
Programmable terminals
Remote line printers
Remote job entry terminals
Teletypewriters
Lease and resale organizations
Branch Sales Offices:
CA Los Angeles
Extel Corp
514 Shatto Pl
213-383-1101
GA Atlanta
Extel Corp
3525 Piedmont Rd NE
404-237-8062
MA Boston
Extel Corp
100 Summer St
617-482-1750
NY New York
Extel Corp
One World Trade Ctr
212-432-9180
TX The Woodlands
Extel Corp
2202 Timberlock Pl
713-367-7931
ONTARIO, CANADA
Markham
Extel Communications (Canada) Ltd
121 McPherson St
416-495-1693
ENGLAND
Slough Birkshire
Transtel Communications Ltd
Station Rd
44-753-44222
HONG KONG
Wanchai
Extel Corp Far East Liason Office
15F 248-250 Hennessy Rd
5-742319

EXXON OFFICE SYSTEMS CO
777 Long Ridge Rd
Stamford, CT 06902
203-329-5000
■ Products & Services
Disks, floppy
Facsimile terminals
Word processors, communicating
Applications packages
Word processing packages
Paper for terminals
Ribbons and supplies for terminals and printers
Branch Sales Offices:
AZ Phoenix
Exxon Office Systems Co
3550 North Central Ave
CA Costa Mesa
Exxon Office Systems Co
695 Town Center Dr
CA Los Angeles
Exxon Office Systems Co
2049 Century Park East
CA Sacramento
Exxon Office Systems Co
1400 K St
CA San Diego
Exxon Office Systems Co
110 West A St
CA San Francisco
Exxon Office Systems Co
Three Embarcadero Center
CA Sunnyvale
Exxon Office Systems Co
1153 Bordeaux Dr
CO Denver
Exxon Office Systems Co
650 South Cherry St
DE Wilmington
Exxon Office Systems Co
One Customs House Sq Customs House Plaza
FL Miami
Exxon Office Systems Co
1825 NW 167th St
FL Altamonte Springs
Q-Tac
401 Whooping Loop
800-327-6666
GA Atlanta
Exxon Office Systems Co
229 Peachtree Ctr Cain Tower
IL Oakbrook
Exxon Office Systems Co
2021 Midwest Rd
IL Chicago
Exxon Office Systems Co
303 East Wacker Dr
IL Bloomington
Exxon Office Systems Co
200 West Front Hundman Bldg
LA New Orleans
Exxon Office Systems Co
800 Commerce Rd West
MD Baltimore
Exxon Office Systems Co
100 South Charles St 1080 Equitable Bank Ctr
MD Bethesda
Exxon Office Systems Co
4550 Montgomery Ave
MA Bedford
Exxon Office Systems Co
2 Oak Park
MI Southfield
Exxon Office Systems Co
4000 Town Ctr
MN Edina
Exxon Office Systems Co
7300 Metro Blvd
MO St Louis
Exxon Office Systems Co
2388 Schuetz Rd
NJ Princeton
Exxon Office Systems Co
1101-T State Rd
NJ Bloomfield
Exxon Office Systems Co
200 Broad Acres Dr
NY New York
Exxon Office Systems Co
1270 Ave of the Americas
NY White Plains
Exxon Office Systems Co
1 N Broadway Sears Tower White Plains Plaza
NY Hartford
Exxon Office Systems Co
One Financial Plaza
NY Lake Success
Exxon Office Systems Co
2001 Marcus Ave
NY New York
Exxon Office Systems Co
645 Fifth Ave Olympic Towers
OH Cincinnati
Exxon Office Systems Co
201 East 5th St 1040 Central Trust Ctr
OH Independence
Exxon Office Systems Co
6155 Rockside Rd
OR Portland
Exxon Office Systems Co
1001 Southwest 5th Ave Orbanco Bldg

PA Lionville
Exxon Office Systems Co
Qyx, EOSC 101 Gordon Dr
PA Pittsburgh
Exxon Office Systems Co
6 Gateway Ctr Westinghouse Bldg
PA Philadelphia
Exxon Office Systems Co
Centre Square East Upper
Mezzanie 1400 Market St
PA Harrisburg
Exxon Office Systems Co
157 Paxton St
TX Dallas
Exxon Office Systems Co
12000 Ford Rd
TX Hurst
Exxon Office Systems Co
301 S Loop 820
TX Fort Worth
Exxon Office Systems Co
1612 Continental Nat'l Bank Bldg
TX Houston
Exxon Office Systems Co
9 Greenegy Plaza Coastal Tower
TX San Antonio
Exxon Office Systems Co
Colonial Frost Bank Tower
TX Austin
Exxon Office Systems Co
3305 Northland Dr
VA Vienna
Exxon Office Systems Co
301 Maple Ave West
VA Rosslyn
Exxon Office Systems Co
1400 Key Blvd
VA Richmond
Exxon Office Systems Co
707 Main St 8th & Main Bldg
WA Seattle
Exxon Office Systems Co
2620 Ranier Bank Tower
WI Brookfield
Exxon Office Systems Co
150 North Sunnyslope Rd

FABRI-TEK INC
6900 Shady Oak Road
Eden Prairie, MN 55344
612-941-9100
Contact: Orval Larson
■ Products & Services
Add-on main memory
Branch Sales Offices:
CA Los Angeles
Fabri-Tek
213-888-9916
FL Melbourne
Fabri-Tek
305-777-1133
IL Chicago
Fabri-Tek
312-843-2929
MN Minneapolis
Fabri-Tek
612-941-9100

FACIT INC
66 Field Point Rd
Greenwich, CT 06830
203-622-9150
Contact: Odd Bjerkmann
■ Products & Services
Cassette drives
Tape, paper
Tape punch/reader, paper
Data entry terminals
Video data terminals (KSR)
Furniture, cabinets, terminal enclosures
Ribbons and supplies for terminals and printers
Branch Sales Offices:
CA Gardena
Facit Inc
540 W Patrice Pl
213-515-4747
CA Foster City
Facit Inc
1167 Chess Dr
415-574-8225
CT Greenwich
Facit Inc
66 Field Point Rd
203-622-9150
IL Elmhurst
Facit Inc
770 N Church Rd
312-834-8100
NJ Secaucus
Facit Inc
501 Winsor Dr
201-866-5111

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Turn to **UpDate Service Card, page 201.**

FAIRCHILD SPACE & ELECTRONICS COMPANY
20301 Century Blvd
Germantown, MD 20874
301-428-6477
Contact: J Martin
■ Products & Services
Earth stations
Data security devices: encoder/decoders
Satellite delay compensation units

FALCO DATA PRODUCTS
1286 Lawrence Station Rd
Sunnyvale, CA 94086
408-745-7123
Contact: Don Naples
■ Products & Services
Data entry terminals
Interactive terminals
Video data terminals (KSR)
Emulation packages

FARADAY INC
805 S Maumee St
Tecumseh, MI 49286
517-423-2111
Contact: A B Thomas
■ Products & Services
Fire detection/protection equipment
Branch Sales Offices:
CA Bell
R W Schatz & Assoc
5600 Lindbergh Ln
213-264-3701
CA San Francisco
Black & Egbert Assoc
2025 McKinnon Ave
415-282-0840
CA Westlake Village
K P Jensen Electronics
3948 Royal Glen
213-889-1121
CO Englewood
J B Sales, Inc
2080 W Hamilton Pl
303-761-9181
FL Jacksonville
Ned Morgan & Assoc
345 Tidewater Circle W
904-724-9320
FL Miami
Alvan C Chaney & Assoc, Inc
117 NE 54th St
305-754-8857
GA Tucker
Electrical Concepts, Inc
2208 Hanfred Ln
404-491-3154
HI Honolulu
John J Harding Co
2825 Ualena St
808-334-6980
IL Palatine
Electronic System Sales
1244 Kennelworth
312-358-5668
IL Rosemont
Fresen Associates Co
7034 Lyndon Ave
312-694-2777
IL St Charles
Electronic System Sales
29 Highgate Ct
312-377-9270
IN Indianapolis
R H Crutchett Assoc
5610 Crawfordsville Rd
317-243-8170
LA Mandeville
Corrigan Agency, Inc
#4 Lovers Ln Unit E Mandeville Complex
504-626-5231
ME Bridgeton
Rehm Assoc
59 High St, N
207-647-2011
MA Watertown
Rehm Assoc
10 Monroe St
617-924-0696
MI Drayton Plains
Elec-Tron
4094 Lamont Dr
313-542-1460
MN Edina
Life Safety Equipment
7200 York Ave S
612-835-3982
MN Long Lake
Younger Assoc
2455 Conty Rd 24
612-475-2293
MO St Louis
Electrical Marketing
11901 Olive Blvd
314-872-8010
NJ Sparta
Fire Lines Co
10 Ginger Ln
201-44-5555
NY Jamaica
Warshaw Electric Co, Inc
116-03 Merrick Blvd
212-525-8150
NC Charlotte
Charles Alley Assoc, Inc
226 Manning Dr
704-553-1674
OH Columbus
John S Wilkin Assoc
4314 F Golden Gate Sq
614-475-3759
OH Hillsboro
John S Wilkin Assoc
115 Meadow Ln
513-393-1137
OH Olmsted Falls
Dardon & Assoc
25595 Chapin St
216-235-8383

PA Bala-Cynwyd
Martin Friedman & Assoc
7 Heather Rd
215-667-1838

PA Harrisburg
C A Juillard, Inc
3305 Walnut St
717-545-9945

PA Jenkintown
E M Treacy Co
231 Wyncote
215-886-5827

PA Pittsburgh
Clayton & Co
112 Wabash Ave
412-922-3398

TN Memphis
Hawkins-Werner Electrical Sales
593 Scott St
901-452-7733

TX Dallas
F D Easlon & Assoc
3647 Jubilee Trail
214-352-3353

TX Garland
Corrigan Agency, Inc
614 Branch Hollow Circle
214-271-6033

TX Houston
Gulf Electrical Marketing, Inc
6201 Washington Ave
713-868-2571

WA Seattle
Don Smith Sales Co
117 N Northlake Way
206-633-3160

WI Elm Grove
B T Sales
14725 Watertown Plank Rd
414-782-1530

WI Racine
L A Fox
1915 Wustum Ave
414-634-8401

FASFAX
PO Box H; Simon & Ledge Sts
Nashua, NH 03061
603-889-5152
Contact: John Hasychak
■ Products & Services
Point of sale terminals

FENWAL INC
400 Main St
Ashland, MA 01721
617-881-2000
Contact: T C Jewell
■ Products & Services
Fire detection/protection equipment
Branch Sales Offices:

CA Burlingame
Fenwal Inc
839 Mitten Rd
415-692-1080

GA Atlanta
Fenwal Inc
4700 Chamblee-Dunwoody Rd
404-457-7128

IL Schaumburg
Fenwal Inc
1635 W Wise Rd
312-351-9767

NJ Andover
Fenwal Inc
109 Tamarack Rd
201-347-5229

TX Houston
Fenwal Inc
4715 Strack Rd
713-440-7426

FERNSEH INC
3485 W 2100 S
Salt Lake City, UT 84119
801-972-8000
Contact: Ed Hippe
■ Products & Services
Data content monitors
Tape punch/reader, paper
Graphic display terminals
Branch Sales Offices:

CA Los Angeles
Fernseh Inc
6300 Arizona Circle
213-641-1636

UT Salt Lake City
Fernseh Display Devices
3485 W 2100 S
801-972-8000

VT McLean
Fernseh Inc
7921 Jones Branch Dr
703-790-5570

FIBRONICS LTD
M T M Industrial Park
Haifa 31905,
04 536217/8/9
Contact: Norma Pasekoff
■ Products & Services
Multiplexers, time division
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modems, broadband, super-group (to 230.4 kb/s)
Modem eliminators
Branch Sales Offices:

MA Reading
Meco Inc
400 Main St
617-944-6660

MO St Louis
Electro Mechanical Associates Inc
8160 Stanford Ave

NY Ronkonkoma
Sigma Communications Assoc Inc
59 Remington Blvd
516-585-6800

OH Columbus
Gerhard & Associates Inc
1384 Grandview Ave

PA Elkins Park
Snow Associates
4 Township Line Rd
215-ES9-4700

QUEBEC, CANADA
Montreal
Positron Industries Inc
4810 Jean Talon Ouest

FINDEX INC
20775 S Western Ave
Torrance, CA 90501
213-533-6842
Contact: A J Bianco
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Database processors
Portable data entry terminals
Word processors, communicating
Branch Sales Offices:

AK Anchorage
The Telephone Co
1443 Northern Light Blvd
907-276-7778

CA Irvine
Datascope Computer Corp
17942 Sky Park Circle
714-540-4204

CA Diamond Bar
2-M Computer System
3333 Bent Twig Ln
714-595-8353

ARGENTINA
1414 Capital Federal
Helioday
Warnes 1180
54-1-8551652

AUSTRALIA
Victoria 3122
Keyline Pty Ltd
529 Burwood Rd Hawthorn
61-3-8191033

CHILE
Santiago
Raylex
Providencia 1244 3er Piso D
56-2-749835

COLOMBIA
Bogota D E
Distecnica Limitada
Carrera 10-66
57-2379514/247-3396

ECUADOR
Quito
STC Ltd
Box 3459
593-2-540973

ENGLAND
London WCI
Findex Microsystems
2829 St James Sq
1-930-5919/5313

GERMANY, WEST
29 Herdweg
Straessle Microcomputer GmbH
7000 Stuttgart 1
49-711-2099200

ISRAEL
Ramat Gan
IPE
17A Abba Hillel Rd
972-3-724073

NETHERLANDS
3038 S V Rotterdam
Findex Benelux B V
Talmastraat 90B
31-10-658533

NIGERIA
Benin City Bendel State
Macs Ltd
1 Okhoro Rd
234-52-243201

PHILIPPINES
Manila
Francar Office Equipment
333 Dasmarinas St
63-2-471739

PORTUGAL
1000 Lisboa
Exponencial Consultores
Av Visconde De Valmor 11-4
351-19-765028

REPUBLIC OF CHINA
Taipei
Kinfond Taiwan Company Ltd
60 Fu Hsin N Rd
86-2-7411465

SAUDI ARABIA
Alkhobar
Codeco
Box 266
966-3-8642126

SINGAPORE
Systematic Business Training Centre
601 Peace Centre Sophia Rd
65-3374555

SOUTH AFRICA
Johannesburg 2000
Findex S A Pty Ltd
Unicorn House
27-11-8546895

SPAIN
Barcelona 17
Instadata S A
Doctor Roux 74
34-3-2037912

SWEDEN
19300 Sigtuna
Datametrix
Box 106
46-760-51655

SWITZERLAND
Holderbank
Microtec Computer Systems AG
Haupstrasse 83 CH-5113
845-68513

FI QUENCH FIRE SYSTEMS OF FIKE METAL PRODUCTS
704 S 10th St
Blue Springs, MO 64015
816-229-3405
Contact: William A Eckholm
■ Products & Services
Fire detection/protection equipment

Branch Sales Offices:
NY Selden
Fi Quench Fire Systems Div of Fike Metal Products
24 Seneca Pl
516-732-0679

TN Nolensville
Fi Quench Fire Systems Div of Fike Metal Products
915 Timberside Dr
615-776-5019

FIRE-LITE ALARMS INC
40 Albert St
New Haven, CT 06504
203-777-7861
Contact: Keith C G Kyle
■ Products & Services
Fire detection/protection equipment

Branch Sales Offices:
SWITZERLAND
Fire-Lite Alarms Inc
9700 Owensmouth Ave Unit 'A'
213-709-1170

FIRST COMPUTER CORP
645 Blackhawk Dr
Westmont, IL 60559
312-920-1050
Contact: Jim Ridenour
■ Products & Services
DDP systems
Minicomputers
Add-on main memory
Disk drives, floppy
Disk drives, large
Disk packs
Tape drives, magnetic
Graphic display terminals
Teleprinters, impact
Video data terminals (KSR)
Word processing packages

Branch Sales Offices:
TX Houston
F C Marketing
4801 Woodway Dr
713-960-1050

FIRST MANHATTAN TELECOMMUNICATIONS CONSULTING
77 Water St, 24th Floor
NYC, NY 10005
212-635-0500
Contact: Robert M Tetenbaum
■ Products & Services
Data communications consultants

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

FLORIDA DATA CORP
3308 New Haven Ave W
Melbourne, FL 32901
305-724-6088
■ Products & Services
Digital plotters
Remote line printers
Teleprinters, impact
Branch Sales Offices:
CA Norwalk
Florida Data Corp
11859 Spry St
213-929-1646
NH Salem
Florida Data Corp
Box 798
603-893-8200
NJ Medford
Florida Data Corp
Box 381
602-268-0600

FORMATION INC
823 E Gate Dr
Mt Laurel, NJ 08054
Contact: Arthur Mendelsohn
■ Products & Services
DDP systems
Minicomputers
Mainframe computers
Database processors
DDP systems software
Operating systems
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Anaheim
Bob Yoder
1735S, Brookhurst St
714-956-5240
IL Elkgrove Village
E D Pulsifer
1838 Elmhurst Rd
312-364-6070
NJ Iselin
Mark Alband
485 U S Hwy 1
201-636-6330
NJ Mt Laurel
Fran K Bodine
133 Gaither Dr
609-778-8200
NY New York
Don Butler
2 Penn Plaza
212-564-5188
WA Rockville
D F Young
416 Hungerford Dr
301-424-1424
BELGIUM
Brussels
Formation International Inc
Steenweg Op Brussel 321 1900 Overijse
011-32-2-687-4080

4-DEGREE CONSULTING
4736 Oxford Rd
Macon, GA 31210
912-477-0293
Contact: Gilbert Held
■ Products & Services
Data communications consultants
Educational services
Network simulation services

FOUR-PHASE SYSTEMS INC
10700 N De Anza Blvd
Cupertino, CA 95014
408-255-0900
Contact: Jo Ann Clairborne
■ Products & Services
DDP systems
Local networks
Minicomputers
Mainframe computers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Video data terminals (KSR)
Word processors, communicating
Branch Sales Offices:
CA El Segundo
Four-Phase Systems Inc
101 Continental Blvd
213-640-1438
CA Newport Beach
Four-Phase Systems Inc
4350 Von Karman
714-752-6656
CA San Bruno
Four-Phase Systems Inc
1150 Bayhill Dr
415-873-9073
CA Sacramento
Four-Phase Systems Inc
800 Howe Ave
916-929-6987
CO Englewood
Four-Phase Systems Inc
5680 S Syracuse Circle
303-770-7600
CT Avon
Four-Phase Systems Inc
20 Tower Ln; Avon Park S
203-678-0440
CT Stamford
Four-Phase Systems Inc
#5 Landmark Sq
203-357-1860
DC Washington
Four-Phase Systems Inc
1850 'K' St
202-785-5600
FL Miami
Four-Phase Systems Inc
8375 NW 53 St
305-591-2374
GA Atlanta
Four-Phase Systems Inc
1888 Emery St NW
404-351-0070
IL Des Plaines
Four-Phase Systems Inc
1111 E Touhy Ave
312-298-9790
IL Chicago
Four-Phase Systems Inc
150 N Wacker Dr
312-558-9550
IN Indianapolis
Four-Phase Systems Inc
6321 La Pas Trail
317-298-9616

KS Overland Park
Four-Phase Systems Inc
9393 W 110 St
913-383-2750

MA Lexington
Four-Phase Systems Inc
33 Hayden Ave
617-861-9235

MI Birmingham
Four-Phase Systems Inc
30700 S Telegraph Rd
313-645-6060

MN Minneapolis
Four-Phase Systems Inc
3001 Metro Dr
612-854-4461

MO St Louis
Four-Phase Systems Inc
11500 Olive Blvd
314-569-2052

NJ Mount Laurel
Four-Phase Systems Inc
303 Fellowship Rd
609-234-0200

NJ Rochelle Park
Four-Phase Systems Inc
365 W Passaic St
201-845-0252

NY New York
Four-Phase Systems Inc
1211 Ave of the Americas; Ninth Fl
212-575-5656

NY New York
Four-Phase Systems Inc
61 Broadway; 21st Fl
212-480-8440

NY Syracuse
Four-Phase Systems Inc
500 S Salina St
315-422-4432

NC Charlotte
Four-Phase Systems Inc
2 Fairview Plaza
704-554-1525

OH Cincinnati
Four-Phase Systems Inc
130 Tri County Pkwy
513-772-3220

OH Cleveland
Four-Phase Systems Inc
5755 Granger Rd
216-661-0720

TX Dallas
Four-Phase Systems Inc
2735 Villa Creek Dr
214-243-1173

TX Houston
Four-Phase Systems Inc
5373 W Alabama
713-961-4601

WA Kirkland
Four-Phase Systems Inc
10604 NE 38 Pl
206-827-9751

WI Wauwatosa
Four-Phase Systems Inc
2433 N. Mayfair Rd
414-476-5123

PUERTO RICO
Hato Rey
Four-Phase Systems Inc
254 Munoz Rivera Ave
809-765-6150

FRANKLIN ELECTRIC PROGRAMMED POWER DIV
995 Benicia Ave
Sunnyvale, CA 94086
408-245-8900
Contact: John Waterman

■ Products & Services
Electrical-parameters test equipment
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:

AZ Tempe
Trembly Assoc
Box 27468
602-967-2058

CO Englewood
Data Specialties Inc
3602 S Jason
303-761-5763

IL Arlington Heights
DyTec Central
315 W University Dr
312-394-3380

IN Indianapolis
DyTec Central
25 Beachway Dr
317-247-1316

IA W DesMoines
Data Power Technology Corp
820 First St
515-255-6113

KS Lenexa
Engineered Equipment Co Inc
No 41 Lenexa Business Center;9900 Pflumn Rd
913-492-9221

MD McLean
Creative Marketing
6716 Old McLean Vlg Dr
703-442-9100

MA Holbrook
McLellan Assoc
63 Cedar Hill Rd
617-767-4771

MN St Paul
Dytec/North Inc
1821 University Ave #163-N
612-645-5816

MO St Louis
Conner Universal
81216 Industrial Dr
314-644-4640

NM Albuquerque
Trembly Assoc
119 Quincy NE
505-266-8616

NY DeWitt
dB Assoc
Box 14
315-446-0220

NY Great Neck
Measurement Technology Inc
159 Northern Blvd
212-895-7177

OH Cleveland
Lax Assoc/North
18615 Detroit Ave
216-226-8815

OH Oxford
Lax Assoc/South
4515 Wallace Rd
513-523-5424

OK Oklahoma City
Computer Power of Oklahoma
4307 N Walnut
405-521-1163

OK Tulsa
Computer Power of Oklahoma
12330 E 60th St South
918-252-5406

PA Pittsburgh
Lax Assoc/East
Box 12613
412-833-5477

TX Dallas
Testech Inc
14001 Goldmark Dr
214-644-5010

TX Houston
Testech Inc
Box 720387
713-491-7997

WA Bellevue
Pacific Northwest Electronics
2020 116th Ave NE
206-454-0150

WI Milwaukee
The Christofferson Co Inc
6727 N Industrial Rd
414-353-0517

FREDERICK ELECTRONICS CORP
PO Box 502
Frederick, MD 21701
301-662-5901
Contact: Ramon C Curry
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Code converters
Error controllers
Switches, data communications: automatic

Branch Sales Offices:

MD Bethesda
Warner Associates Inc
9911 Carter Rd
301-469-8904

AUSTRIA
Vienna
Gebruder Schoeller
Industriegasse 7 A-1230

ENGLAND
Ferndown, Wimborne
Intertec Ltd
55 Cobham Rd
0202-893838

GERMANY, WEST
8000 Munchen 50
Nucletron Vertriebs-GMBH
Gartnerstrabe 60

KOREA REP (REP)
Seoul
ATC Electronics
KPO Box 739

NETHERLANDS
3731 HA DE Bilt
Hessing Telecommunicatie BV
Groen Van Prinstereweg 15-17

NEW ZEALAND
Porirua
AWA New Zealand Ltd
Wi-neera Dr, Box 50-248

NORWAY
Oslo
Luftmateriell Ostlandske Lloyd A/S
Box 534 Prinsensgt 2C

PERU
Lima
Manuel A Ojeda Representaciones SCRL
Chinchon 836-San Isidro

PHILIPPINES
Makati
Philippine Consultancy Systems Inc
Electra House 115, Esteban, Lepaspi Village

SINGAPORE
Singapore
Anrite Aviation Co PTE Ltd
5-8 West Camp, Seletar Airport

TAIWAN
Taipei
Full Chance trading Co Ltd
Box 46-234

FREQUENCY TECHNOLOGY INC, TDC DIV
410 Great Rd
Littleton, MA 01460
617-486-3539
Contact: Alan Mendel

FTC COMMUNICATIONS INC
90 John St
New York, NY 10038
212-669-9740
Contact: L J Gatti
■ Products & Services
International record carriers

FUTUREDATA COMPUTER CORP
5730 Buckingham Pkwy
Culver City, CA 90230
213-641-7700
Contact: Jeff Shahan
■ Products & Services
Cassettes
Disk drives, floppy
Branch Sales Offices:
AL Arab
SRI
Box 529
205-498-3380
CA Culver City
GenRad/DSD
5730 Buckingham Pkwy
213-641-7700
CA Sunnyvale
Amasco
1307 S Mary Ave
408-733-8690
CA Culver City
GenRad/DSD
5730 Buckingham Pkwy
213-641-7700
CT Danbury
Martindale Associates Inc
10 Walnut St
203-748-2253
FL Casselberry
SRI
Box 1125
305-339-0978
FL Coral Springs
SRI
Box 9289
305-753-6700
FL Largo
SRI
Box 1910 13498 Ulmerton Rd
813-596-5331
IL Arlington Heights
Dytec/Central Inc
315 W University Dr
312-394-3380
IN Indianapolis
Dytec/Central Inc
25 Beachway Dr
317-247-1316
KS Lenexa
Dytec/South Inc
8245 Nieman
913-888-0215
MA North Reading
Martindale Associates Inc
212 Main St
617-942-0514
MI Plymouth
Micro Sales
595 Forest
313-459-1670
MN St Paul
Dytec/North Inc
1821 University Ave
612-645-5816
MO Maryland Heights
Dytec/South Inc
11657 Adie Rd
314-569-2990
NJ Englewood
Tecnimat
500 Grand Ave
201-569-4200
NY Syracuse
Martindale & Paul Inc
202 Twin Oaks Dr
315-432-1141
NC Raleigh
SRI
Box 58331
919-834-2165
OH Centerville
Micro Sales
Box 450 34 Virginia Ave
513-433-8171
OH North Olmsted
Micro Sales
5511 Burns Rd
216-734-3080
OK Tulsa
Data Marketing Associates Inc
6921 S Canton Ave
918-496-1457
OR Portland
Pacific Northwest Electronics
2035 SW 58th
503-297-8056
PA King of Prussia
Advanced Technology Associates Inc
Valley Forge Plaza 1150 1st Ave
215-265-0808
PA Pittsburgh
Micro Sales
1012 Glencoe Ave
412-928-8118
TX Dallas
Data Marketing Associates Inc
14235 Proton Rd
214-661-0300
VA McLean
Creative Marketing Associates Ltd
6716 Old McLean Village Dr
703-442-9100
WA Bellevue
Pacific Northwest Electronics
2020 116th NE
206-454-0150

Want even more information on products?
Turn to **UpDate Service Card, page 201.**

GALILEO ELECTRO-OPTICS CORP
Galileo Park
Sturbridge, MA 01518
617-347-9191
Contact: Edward E Heske
■ Products & Services
Lightwave (fiber optic) systems
Cables, lightwave (optical fiber)

GALITE INC
Tower Drive, PO Box 50
Wallingford, CT 06492
203-265-7126
Contact: Bob Belard
■ Products & Services
Cables, electrical prefabricated extending
Cables, lightwave (optical fiber)

GAMMA TECHNOLOGY INC
2452 Embarcadero Way
Palo Alto, CA 94303
415-856-7421
Contact: H S Magnuski
■ Products & Services
Remote network processors
DDP systems
Interactive terminals
Remote job entry terminals
DDP systems software
Emulation packages
Data security devices: software security modules
Protocol converters
Data communications consultants
Branch Sales Offices:
ISRAEL
Givataim
Team Computers & Systems Ltd
5 Tefutzot St
03-771031
NETHERLANDS
Pumerend
SDT Data Technology BV
Waterland Efficiency Groep;Gorslaan 10
02-990-32081
SOUTH AFRICA
Pretoria
Perseus Computing Automation
Box 3986
47-1161
SPAIN
Madrid
Hispano Electronica Information sa
Aportado de Correos 48
619-4108
SWITZERLAND
Newmarkt
Interautomation AG
CH-5200 Brugg Postfach 365
056-41-94-00

GANDALF DATA INC
1019 S Noel Ave
Wheeling, IL 60090
312-541-6060
Advertising page 6
Contact: L M Kitilson
■ Products & Services
Concentrators
Front-end processors
Message switchers
Modem sharing units
Multiplexers, statistical (intelligent)
Packet processors
Port selectors
Port sharing units
Lightwave (fiber optic) systems
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)

Modem eliminators
Error rate detectors
Switches, data communications: automatic
Branch Sales Offices:
AZ Phoenix
Zeus inc
546 East Portland
602-253-6101
CA El Monte
Gandalf Data Inc W
9060 Telestar Ave
213-571-6644
CA Tustin
Electronic Marketing Specialists
2600 Walnut Ave
714-832-9920
FL Orlando
FM Associates Ltd
5018 Mortier Ave
305-851-5710
HI Honolulu
Data Management
677 Ala Moana Blvd
808-531-5136
MD Silver Spring
Terminal Networks
1370 Lamberton Dr
301-649-6000
MA Wakefield
IMF Sales Associates
18 Lakeside Office Pk
617-245-8900
MN Edina
RAE Associates
6415 Limerick Dr
612-941-3221
MO Maryland Hts
Dytec South
11657 Adie Rd
314-569-2990
NJ Englewood
Tecnimat Inc
500 Grand Ave
201-569-4200
NY E Syracuse
Ossmann Instruments
6666 Old Collamer Rd
315-437-6666
OH Rocky River
ARC Associates
21330 Center Ridge
216-333-8375
TX Houston
Comspec Inc
10000 Old Katy Rd
713-461-4487
WA Bellevue
Thorson Company Northwest
12301 NE 10th Pl
206-455-9180
ONTARIO, CANADA
Ottawa
Gandalf Data Communications Ltd
9 Slack Road
613-225-0565

GATES ACOUSTINET INC
PO Box PP
Santa Rosa, CA 95403
707-584-7360
Contact: John Riewe
■ Products & Services
Furniture, cabinets, terminal enclosures

GATES ENERGY PRODUCTS INC
1050 S Broadway
Denver, CO 80217
303-744-4806
Contact: M R Harrison
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AL Huntsville
REMCO
3322 S Memorial Pkwy
205-883-9260
AZ Scottsdale
DAR-C Inc
14425 N Scottsdale
602-948-2240
CA San Jose
Milton Reynolds
6219 W Walbrook Dr
408-252-7320
FL Pompano Beach
V G Sales Co Inc
2500 NW 16th Ln
305-971-0900
GA Atlanta
REMCO
4126 Pleasantdale Rd
440-447-6937
IL Arlington Heights
James N Bailey
902 N Evergreen
312-398-5590
IN Indianapolis
France Enterprises Inc
11910 E Washington St
317-894-1090
MD Towson
William B MacLea
5 Lombardy Pl
301-321-0852
MA Maynard
Robert W Ojalehto
2 Walker St
617-897-6991
MN Minneapolis
HMR Inc
7200 France Av S
612-831-7400
NJ Somerville
Daniel H Pantiel
525 Brookside La
201-359-2019
OR Portland
Fleehart & Sullivan Inc
900 NW Joy Ave
503-641-8540
TX Richardson
R F Kimball Co Inc
605 S Sherman
214-231-3447
TX Houston
R F Kimball Co Inc
3233 Weslayan
714-840-0590
TX Austin
R F Kimball
2101 IH 35 South
515-443-5284
WA Seattle
Fleehart & Sullivan Inc
10109 Aurora Ave N
206-527-5454
BRITISH COLUMBIA, CANADA
Vancouver
C D Nova Ltd
217B East 16th Ave
604-872-8106
ONTARIO, CANADA
Mississauga
Munro Electronic Components Ltd
2244 Drew Rd
416-676-1042

ENGLAND
Cranleigh Surrey
Chloride-Gates Energy Ltd
Little Mead Ind Estate
011-44-04866-71181

GENASYS INTERNATIONAL INC
10 E 40 St
NY, NY 10016
212-532-8555
Contact: Bruce W Tarr

GEN/COMP INCORPORATED
6 Algonquin Rd.
Canton, MA 02021
617-828-2008
Contact: Gerald E Nutter
■ Products & Services
Terminal controllers
Terminal interfaces
Cables, electrical prefabricated extending
Computer/communications interfaces

GENERAL AUTOMATION
1055 S East St
Anaheim, CA 92805
714-778-4800
Contact: Joseph Pleso
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, time division
DDP systems
Local networks
Microcomputer/ microprocessor systems
Minicomputers
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Tape punch/reader, paper
Badge readers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Teleprinters, impact
Terminal controllers
Custom programs
DDP systems software
Emulation packages
Operating systems
Computer/communications interfaces
Data security devices: personal identification systems
Data communications consultants
Maintenance organizations
Used equipment
Branch Sales Offices:
AZ Scottsdale
General Automation
6900 E Camelback Rd
602-941-2749
CA San Francisco
General Automation
425 Battery St
415-398-2361
CA Sunnyvale
General Automation
306 Potrero Ave
408-245-6500
CA Santa Ana
General Automation
1900 E 4 St
714-972-8383
GA Atlanta
General Automation
2111 Powers Ferry Rd
404-955-8860

IL Bensenville
California GA Corp
1260 Mark St
312-860-4800
IN Indianpolis
General Automation
2346 S Lynhurst
317-248-0377
MD Hanover
General Automation
7225 Parkway Dr
301-796-7900
MI Farmington Hills
General Automation
24320 Indoplex Circle
313-478-2640
MI Grand Rapids
General Automation
2120 44 St SE
616-455-2000
MN Minneapolis
General Automation
7851 Metro Pkwy
612-854-0440
NJ Hasbrouck Heights
General Automation
377 Route 17
201-288-6560
NY New York
General Automation
One Penn Plaza
212-736-3737
NY Rochester
General Automation
1411 Chile Ave
716-436-8030
OH Cincinnati
General Automation
4055 Executive Park Dr
513-563-0860
OH Rocky River
General Automation
20525 Center Ridge Rd
216-333-3544
PA Pittsburgh
General Automation
875 Greentree Rd
412-921-3100
TX Dallas
General Automation
4300 Alpha Rd
214-661-5370
TX Houston
General Automation
8554 Katy Frwy
713-464-2815
WI West Allis
General Automation
10201 West Lincoln Ave
414-321-1020

GENERAL CABLE CO, A DIV OF GK TECHNOLOGIES
500 W Putnam Ave
Greenwich, CT 06830
203-661-0100
■ Products & Services
Lightwave (fiber optic) systems
Cables, electrical prefabricated extending
Cables, lightwave (optical fiber)

GENERAL DATACOMM IND INC
1 Kennedy Ave
Danbury, CT 06810
203-797-0711
Advertising pages 39,41
Contact: Joseph Scarpa
■ Products & Services
Concentrators
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, statistical (intelligent)
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Network management centers
Technical control centers
Data access arrangement devices
Protocol converters
Branch Sales Offices:
CA North Ridge
General DataComm Industries Inc
8910 Quartz St
213-998-3737
CA San Jose
General DataComm Industries Inc
1737 N First St
408-998-2336
CA Santa Ana
General DataComm Industries Inc
3609 W MacArthur Blvd
714-957-0244
GA Atlanta
General DataComm Industries Inc
6520 Powers Ferry Rd
404-955-0682
IL Des Plaines
General DataComm Industries Inc
3150 Des Plaines Ave
312-298-4181
NJ Great Neck
General DataComm Industries Inc
98 Cutter Mill Rd
212-423-5080
TX Dallas
General DataComm Industries Inc
7616 LBJ Frwy
214-980-0803

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

GENERAL ELECTRIC CO/ COMMUNICATION EQUIPMENT LEASING AND SERVICE
1 River Rd; Bldg 4-Room 210
Schenectady, NY 12345
518-385-0157
Advertising page 167
Contact: Bruce Leibold
■ Products & Services
Concentrators
Multiplexers, statistical (intelligent)
Acoustic couplers
Line drivers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
DDP systems
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Video data terminals (KSR)
Video data terminals (RO)
Data access arrangement devices
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations

GENERAL ELECTRIC CO
DATA COMM PROD DEPT
GE Drive
Waynesboro, VA 22980
703-949-1188
Contact: R J O'Flaherty
■ Products & Services
Remote network processors
Cassette drives
Disk drives, floppy
Tape, magnetic
Tape punch/reader, paper
Batch terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Word processors, communicating
Branch Sales Offices:
CA Sacramento
General Electric Co; Data Comm Dept
2160 Royale Rd
916-927-3638
CA El Monte
General Electric Co; Data Comm Dept
9350 E Flair Dr
213-572-5310
CA Fremont
General Electric Co; Data Comm Div
39180 State
408-925-6648
CT Meriden
General Electric Co; Data Comm Dept
1 Prestige Dr
203-238-6800
GA Atlanta
General Electric Co; Data Comm Dept
270 Carpenter Dr NE
404-256-1966
IL Oak Brook
General Electric Co; Data Comm Dept
814 Commerce
312-986-3535
MD Rockville
General Electric Co; Data Comm Dept
6110 Executive Blvd
301-770-4434
MA Wilmington
General Electric Co; Data Comm Dept
50 Fordham Rd
617-657-4800
NY New York
General Electric Company
International Sales Div; 570 Lexington Av
212-750-2000
PA Pittsburgh
General Electric Co; Data Comm Dept
300 Sixth Av Bldg
412-566-4116

TX Dallas
General Electric Co; Data Comm Dept
6350 LBJ Frwy
214-661-5137
TX Houston
General Electric Co; Data Comm Dept
4444 FM 1960W
713-440-3580
WA Seattle
General Electric Co; Data Comm Dept
112 Andover Park E
206-575-2810
ALBERTA, CANADA
Calgary
Canadian General Electric Co Ltd
500-4th Ave SW
403-266-1553
BRITISH COLUMBIA, CANADA
Vancouver
Canadian General Electric Co Ltd
1177 W Hastings St
604-681-8136
ONTARIO, CANADA
Rexdale
Canadian General Electric Co Ltd
396 Attwell Dr
416-675-7500
QUEBEC, CANADA
Montreal
Canadian General Electric Co Ltd
2001 University Av
514-849-9491
AUSTRALIA
Ultimo NSW
Australian General Electric Ltd
86-90 Bay St
212-3711
ENGLAND
London
International General Electric Company of New York Ltd
Park Lorne, 111 Park Rd
01-402-4100
FRANCE
Paris
General Electric Technical Service Co
42 Avenue Montaigne
225-52-32
GERMANY, WEST
Frankfurt
General Electric Germany
Eschersheimer Landstrasse 60/62
0611-15641
ITALY
Milan
Compagnia Generale DiElettricita
Via Pergolesi 25
20-46-641
JAPAN
Tokyo
General Electric Japan Ltd
Tonichi Bldg; 6-2-31 Roppongi Minato-ku
405-2920
SWEDEN
Solna
International General Electric AB
Tritonvagen 27; Fack 17120
73-00-740

GENERAL ELECTRIC INFORMATION SERVICES CO
401 N Washington St
Rockville, MD 20850
301-340-4000
Contact: L B Ramer
■ Products & Services
Timesharing/service bureaus
Branch Sales Offices:
CA San Francisco
GE Information Services Company
Two Embarcadero Ctr
415-546-4414
GA Atlanta
GE Information Services Company
1800 Century Parkway NE
404-320-3900
IL Oak Brook
GE Information Services Company
2122 York Rd
312-986-3429
MD Rockville
General Electric Information Services Company
401 N Washington St
NY New York
GE Information Services Company
McGraw Hill Building;1221 Ave of the Americas
212-997-0300
PA Philadelphia
GE Information Services Company
Centre Square West;1500 Market St
215-241-5500
PUERTO RICO
Hato Rey
General Electric Technical Services Company
Banco de Ponce Bldg;868 Munoz Rivera Ave
ONTARIO, CANADA
Ontario
Canadian General Electric Company Limited
1420 Dupont St
AUSTRALIA
Milsons Points
General Electric Information Services Party Ltd
61 Lavender St
AUSTRIA
A-1150 Wien
General Electric Information Services Ges, MbH
Storchengasse 1
BELGIUM
1040 Brussels
General Electric Information Services NV
Avenue Des Arts 56
DENMARK
1270 Kobenhavn K
OK Data
Gronningen 17
ENGLAND
London WCIB 5AB
GEISCO Limited
114-118 Southampton Row
FINLAND
00520 Helsinki 52
OY Nokia, AB Elektroniikka Time Sharing Service Laskentakeskus
Opastinsilta 8E
FRANCE
92541 Montrouge Cedex
General Electric Information Services
19, Ave Leon Gambetta BP 338
GERMANY, WEST
500 Koeln 41
General Electric Information Services GmbH
Luxemburger Strasse 299
HONG KONG
Hong Kong
General Electric Technical Services Company
Wheelock House;20 Pedder St
ITALY
20129 Milano
General Electric Information Services SpA
Via Regina Giovanna, 29
JAPAN
Chuo-Ku, Tokyo 104
Information Services International-Dentsu Ltd
Kosan #2 Bldg;1-7-13, Tsukiji
MEXICO
Mexico 6, DF
Tiempo Compartido, SA
Paseo de la Reforma
NETHERLANDS
1014 BA Amsterdam
General Electric Information Services BV
Kabelweg 37
NORTHERN IRELAND
Dublin 4
GEISCO Limited
Franklin House;140-142 Pembroke Rd;Ballsbridge
NORWAY
Oslo 1
General Electric Information Services A/S
Roald Amundsens Gat 2;Postboks 1770 Vika
SPAIN
Madrid 20
General Electric Information Services SA
Pedro Teixeira 8
SWEDEN
S 171 23 Solna
General Electric Information Services AB
Vretenvagen 13;Box 1163
SWITZERLAND
8032 Zurich
General Electric Information Services AG
Bergstrasse 138
VENEZUELA
Caracas
General Electric de Venezuela
Saban Grande;Apartido 1666-Zona Postal 101

GENERAL ELECTRIC — VIDEO DISPLAY
Electronics Park 6-206
Syracuse, NY 13221
315-456-2152
Contact: Jerrold P Gundersen
■ Products & Services
Teleconferencing networks
Graphic display terminals
Video data terminals (RO)

GENERAL INSTRUMENT BUSINESS SYSTEMS DIV
271 Schilling Cir
Hunt Valley, MD 21031
301-667-0700
Contact: Mike McHale
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Point of sale terminals
Terminal controllers
Custom programs

Branch Sales Offices:
CA Arcadia
General Instrument/Business Systems Div
418-A East Live Oak Ave
213-445-8255
IL Park Ridge
General Instrument/Business Systems Div
1550 Northwest Hwy
312-298-0404
NY New York
General Instrument/Business Systems Div
1775 Broadway
212-974-1910

GENERAL OPTRONICS CORP
3005 Hadley Rd
South Plainfield, NJ 07080
201-753-6700
Contact: Peter W Hankin
■ Products & Services
Lightwave (fiber optic) systems
Infrared systems
Local networks
Teleconferencing networks
Branch Sales Offices:
ENGLAND
Farnham Surrey GU9 7QU
Melles Griot
15 South St
858807 Udtukg
FRANCE
92380 Garches
Equipements Scientifiques SA
54 Rue du 19 Janvier
204004 F
GERMANY, WEST
D-2000 Hamburg 60
Microscan GMBH
Uberseering 31
213288 SCAN D
ITALY
20129 Milano
Farnell Italia
Via g Mameli 31
315131
SWITZERLAND
CH-8049 Zurich
Syscom AG
Ingenieurunternemung;Limmattalstrasse 220
58577 Syscoch

GENERAL TELEPHONE COMPANY OF INDIANA INC
8001 W Jefferson Blvd
Fort Wayne, IN 46804
219-426-2580
Contact: James L Brissey
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Automatic calling units

GENERAL TELEPHONE CO OF KENTUCKY
Box 1650
Lexington, KY 40592
606-253-4000
Contact: Ralph Carr
■ Products & Services
Telephone companies
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modem eliminators
Technical control centers
Tape, magnetic
Tape, paper
Tape punch/reader, paper
Batch terminals
Programmable terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Video data terminals (RO)
Automatic answering units
Automatic calling units
Data access arrangement devices
Data jacks and plugs
Furniture, cabinets, terminal enclosures
Data communications consultants
Branch Sales Offices:
KY Lexington
General Telephone of Kentucky
3358 Tates Creek Rd
606-268-9111
KY Ashland
General Telephone of Kentucky
619 15 St
606-329-1333
KY Elizabethtown
General Telephone of Kentucky
Box 10
502-737-3011

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

GENERAL TELEPHONE CO OF THE NORTHWEST
1800 41st St
Everett, WA 98201
206-258-5025
Contact: Ed Ferris
■ Products & Services
Telephone companies
Branch exchanges—computerized (CBX)
Concentrators
Line sharing units
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Port selectors
Channel service units
Digital service units
Line drivers
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Network management centers
Technical control centers
Disk drives, floppy
Disks, floppy
Floppy disk recorders
Tape punch/reader, paper
Batch terminals
Data entry terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teletypewriters
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Automatic calling units
Cables, lightwave (optical fiber)
Code converters
Computer/communications interfaces
Data compression devices
Data jacks and plugs
Switches, data communications: automatic
Data communications consultants
Educational services
Maintenance organizations
Branch Sales Offices:
ID Moscow
Data Consultant
912 S Washington
208-882-2511
OR Beaverton
Data Consultant
17855 NW Cornell Rd
503-629-2514
WA Bellevue
Data Consultant
2821 Northrup Way
206-347-8900
WA Kennewick
Data Consultant
6515 W Clearwater Ave
509-735-7535

GENERAL TELEPHONE CO OF WISCONSIN
PO Box 49
Sun Prairie, WI 53590
608-837-1211
Contact: Dennis C Solie
■ Products & Services
Telephone companies
Branch exchanges—computerized (CBX)
Modems, limited distance
Modems, multipoint
Tape, magnetic
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Data access arrangement devices
Switches, data communications: manual
Branch Sales Offices:
WI Wausau
General Telephone Co of Wisconsin
413 McClellan
715-847-1255
WI Sun Prairie
General Telephone Co of Wisconsin
608-837-1670

GENERAL TERMINAL CORP
14831 Franklin Ave
Tustin, CA 92680
714-730-0123
Contact: Irene Kanoshita
■ Products & Services
Data entry terminals
Graphic display terminals

Programmable terminals
Interactive terminals
Video data terminals (RO)
Branch Sales Offices:
CA Tustin
General Terminal Corporation
14831 Franklin Ave
714-730-0123
MA Burlington
General Terminal Corp
Second Ave
617-272-6660
ONTARIO, CANADA
Markham
LANPAR Ltd
85 Torby Rd
416-495-9123
AUSTRALIA
Pymble
Digital Electronics Pty Ltd
Box 324
612-438-2444
DENMARK
Glostrup
Technitron
Smedeland 8
029-698-22
ENGLAND
Sevres
GTC Inc
Rye Carle Vernet
027-7535
ENGLAND
Chertsey, Surrey
SEN Electronics Ltd
5 London St
44-9328-66744
FINLAND
Espoo
Oy EMMETT Ab
Meteorinkatu 3 C-D
90-88-2044
FRANCE
Sevres
Tekelec Airtronics S A
Rue Carle Vernet
331-534-7535
GERMANY, WEST
Munich
Synelec Datensysteme Gmbh
Lindwurmstrasse 117
089-725-3081
ISRAEL
Tel Aviv
DROR Computer System Ltd
3 Nafcha St
03-286-550
ITALY
Milano
CAI Spa
Via Ferrante Aporti 12
MALAYSIA FED OF
Bangsar
Unidata
Syed Kechik Bldg
NORWAY
Kristiansand
Technitron A/S
Box 4510 Grim
042-314-60
SOUTH AFRICA
Roderick, Lynwood
Perseus Comp & Automation
Box 3986
472-782
SWEDEN
Stockholm
Technitron Sweden AB
Box 49013
854-111-13

SWITZERLAND
Geneva
SEN Electronique
31 Avenue Ernest Pictet
022-442-940

GENISCO COMPUTERS CORPORATION
3545 Cadillac Ave
Costa Mesa, CA 92626
714-556-4916
Contact: R J Chartrand
■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Terminal interfaces
Branch Sales Offices:
AZ Phoenix
Computer Peripheral Sales
602-242-4025
CO Englewood
Data Systems Marketing
14 Inverness Drive E
303-770-1972
MD Rockville
L G White & Co
12111 Parklawn Dr
301-792-0660
MI Milford
Milford Scientific
203 Union St
313-685-8912
OH Dayton
Boco
333 W 1 St
513-224-0220
OR Hillsboro
Data Systems Marketing
910 NW Brookwood
503-640-4883
TX Dallas
Remtek
13500 Midway Rd
214-287-2855
UT Salt Lake City
Data Systems Marketing
1864 S State St
801-487-8281
WA Kirkland
Data Systems Marketing
1371/2 Commercial Ave
206-827-0402
BRITISH COLUMBIA, CANADA
Dorval
Datamex
785 Lajoie Ave
514-636-9774
BRITISH COLUMBIA, CANADA
Vancouver
Datamex
890 W Pender St
604-684-8625
ONTARIO, CANADA
Toronto
Datamex
14 Leswyn Rd
416-787-1208
ONTARIO, CANADA
Ottawa
Datamex
1750 Courtwood Crescent
613-224-1391
AUSTRALIA
Artarmon
Datamatics
60/64 Dickson Ave
438-2699

ENGLAND
Northampts
Van Rietschoten & Houwens UK Ltd
Oxford Rd
903-206096
NETHERLANDS
Rotterdam
Van Rietschoten & Houwens
155 Sluisjesdijk
010-298811

GENRAD INC
300 Baker Ave
Concord, MA 01742
617-369-4400
Contact: Sales & Services Div
■ Products & Services
Electrical-parameters test equipment
Branch Sales Offices:
CA Irvine
Genrad
17361 Armstrong Ave
714-540-9830
CA Santa Clara
Genrad
2855 Bowers Ave
408-727-4400
FL Orlando
Genrad
3751 Maguite Blvd
305-894-4303
IL Schaumburg
Genrad
1067 E State Pkwy
312-843-5599
MD Rockville
GenRad Inc
1701 Research Blvd
301-424-6224
MA Waltham
Genrad
170 Tracer Ln
617-890-4900
NY Fairlawn
Genrad
22-08 Route 208
201-797-8001
OH Milford
Genrad
Park 50, 2002 Ford Circle
513-831-9210
TX Richardson
Genrad
1121 Rockingham Ln
214-234-3357

GILTRONIX INC
450 San Antonio Ave
Palo Alto, CA 94306
415-493-1300
Advertising page 155
Contact: Joel Walz
■ Products & Services
Concentrators
Message switchers
Modem sharing units
Port selectors
Remote network processors
Data content monitors
Network management centers
Technical control centers
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Applications packages
Custom programs
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces

Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Data communications consultants
Branch Sales Offices:
CA Mt View
Digital Deli
80 West El Camino
415-961-2670
CA Palo Alto
Devoke Data Products
Box 51230
415-494-8844
CA Torrance
Allen Edwards
2808 Oregon Ct
213-328-9770
FL Indian Harbor
GTI of Florida
Box 2176
305-777-1133
GA Stone Mountain
GTI of Atlanta
Box 1048
404-498-2341
IL Westmont
Telcomm Products
107 West 61st St
800-323-7385
IN Memphis
GTI of Tennessee
3093 Stonebrook Circle
901-565-7807
MD Washington Grove
Wiltronix
16850 Oakmont Ave
301-460-1454
MA Cambridge
Compumart
270 Third St
617-491-2700
NY NY
EIA
38 East 29th St
212-683-9100
NC Matthews
GTI of Carolina
7519 Limerick Dr
704-364-9892
OH Toledo
Multi-Tronix
3210 Terry Dr
419-472-0723

GLASGAL COMMUNICATIONS SERVICES INC
103 First St
Harrington Park, NJ 07640
201-768-8082
Contact: Ralph Glasgal
■ Products & Services
Concentrators
Line sharing units
Modem sharing units
Multiplexers, frequency division
Inverse multiplexers
Multiplexers, statistical (intelligent)
Multiplexers, group band
Port selectors
Port sharing units
Acoustic couplers
Digitized-voice processors
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modem eliminators
Data content monitors
Error rate detectors
Protocol analyzers
RTS emulator
Technical control centers
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data access arrangement devices
Data security devices: encoder/decoders
Error controllers
Protocol converters
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:
NY New York
Glasgal Communications Services Inc
521 Fifth Ave
212-687-2455

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

GLENAYRE ELECTRONICS INC
Box 1740 8-12th St
Blaine, WA 98230
206-676-1980
Contact: Edwin F Grobler
■ Products & Services
Automatic calling units
Computer/communications interfaces
Power supplies
Branch Sales Offices:
TX Bedford
Glenayre Electronics Inc
Box 217
817-267-8961
WA Seattle
Glenayre Electronics Inc
Box 20713
206-631-5832

GML INFORMATION SERVICES
594 Marrett Rd.
Lexington, MA 02173
617-861-0515
Contact: Patrick Kenealy
■ Products & Services
Data communications consultants
Educational services

GNAT COMPUTERS, INC.
7895 Convoy Court—Bldg. 6
San Diego, CA 92111
714-560-0433
Contact: Derrel Dunivin
■ Products & Services
Front-end processors
DDP systems
Programmable terminals
Word processors, communicating
Branch Sales Offices:
CA San Leandro
Data Technology
700 Whitney St
415-638-1206
VA McLean
American Peripheral Systems
1491 Chain Bridge Rd
703-893-9700

GOODWOOD DATA SYSTEMS
150 Rosamond St
Carleton Pl, ON K7C 3P4
Canada
613-257-3610
Contact: D G Grainger
■ Products & Services
EIA cable testers
Graphic display terminals
Programmable terminals
Interactive terminals
Educational services
Branch Sales Offices:
NY Ogdensburg
Goodwood Data Systems
Box 768
613-257-3610
HONG KONG
Mei Kowloon
Goodwood Data Systems
6C-12 Broadway Ave
3-7431161

GORDOS INTERNATIONAL CORP
250 Glenwood Ave
Bloomfield, NJ 07003
201-743-6800
Contact: Steve Kunnmann
■ Products & Services
Cartridges
Disks, floppy
Disk packs
Code converters
Data access arrangement devices

GOULD INC, INSTRUMENTS DIV, BIOMATION OPERATION
4600 Old Ironsides Dr
Santa Clara, CA 95050
408-988-6800
Contact: John Roth
■ Products & Services
Data content monitors
Electrical-parameters test equipment
Branch Sales Offices:
AL Huntsville
W A Brown Inst Inc
Box 4560
205-883-8660
AZ Scottsdale
BFA Corp
4426 N Saddlebag Tr
602-994-5400
CA Rodondo Beach
Ward/Davis Aassoc
2615 Manhattan Bch Blvd
213-973-7772
CA Santa Clara
Ward/Davis Aassoc
3329 Kifer Rd
408-245-3700
CA San Diego
Ward/Davis Aassoc
7263 Engineer Rd
714-292-1000

CO Denver
BFA Corp
1221 S Clarkson
303-777-8070

CT N Haven
Pat Jenks Assoc
52 Washington Ave
203-239-6201

FL Orlando
W A Brown Inst Inc
Box 513
305-425-5505

FL Ft Lauderdale
W A Brown Inst Inc
961 NW 53 St
305-776-4800

FL Melbourne
W A Brown Inst Inc
Box 1406
305-723-0766

FL Ft Walton Beach
W A Brown Instruments, Inc
107 A Tupelo Ave
904-243-3189

FL Mandeville
W A Brown Instruments, Inc
1700 North Causeway Blvd
504-626-9701

GA Atlanta
W A Brown Inst Inc
3871 NE Expry
404-455-1035

HI Honolulu
EMC
2979 Ualena St
808-836-1138

IL Arlington Heights
Dytec Central
315 W University Dr
312-394-3380

IN Indianapolis
Dytec Central
317-247-1316

IA Iowa City
Dytec Central
Box 2148
319-683-2282

KS Lenaxa
Dytec South
8245 Neiman Rd
913-888-0215

MA Wakefield
Pat Jenks Assoc
114 Cummings Pk
617-938-0488

MN St Paul
Dytec North
1821 University Ave
612-645-5816

MO Maryland Heights
Dytec South
11657 Adie Rd
314-569-2990

NM Albuquerque
BFA Corp
1704 Moon NE
505-292-1212

NM Las Cruces
BFA Corp
Box 1237
505-524-9693

NY DeWitt
D B Associates
Box 14
315-446-0220

NY Port Chester
Radiation Electronics
Box 564
914-937-2300

NC Durham
W A Brown Inst Inc
828 Glendale Ave
919-683-1580

OH Chesterland
EQS Systems
Box 445
216-729-2222

OH Dayton
EQS Systems
Box 24013
513-294-2476

PA Bensalem
Eastern Instrumentation
Street Rd & Bristol Pike
215-245-6660

SC Columbia
W A Brown Inst Inc
1234 St Andrews Rd
803-798-8070

TN Oak Ridge
W A Brown Inst Inc
132 Fairbanks Rd
615-482-5761

TX Houston
Data Marketing Associates
9777 Harwin St
713-780-2511

TX Dallas
Data Marketing Associates
14235 Proton Rd
214-661-0300

TX San Antonio
Data Marketing Associates
833 Isom Rd
512-342-3031

TX Tulsa
Data Marketing Associates
6921 South Canton
918-496-1457

TX Austin
Data Marketing Associates
300 E Huntland
512-451-5174

UT Salt Lake City
BFA Corporation
140 W 2100 S
801-466-6522

VA McLean
Creative Marketing Assoc
6716 Old McLean Village Dr
703-442-9100

WA Bellevue
Pacific Northwest Electronics
2020 116th Avenue NE
206-454-0150

WA Portland
Pacific Northwest Electronics
2035 Southwest 58th St
503-297-8056

ALBERTA, CANADA
Calgary
Allan Crawford Associates
1935-30th Ave NE
403-230-1341

BRITISH COLUMBIA, CANADA
Burnaby
Allan Crawford Associates
3795 William St
604-294-1326

ONTARIO, CANADA
Ottawa
Allan Crawford Associates
881 Lady Ellen Pl
613-722-7682

ONTARIO, CANADA
Mississaugn
Allan Crawford Associates
6503 Northam Dr
416-678-1500

QUEBEC, CANADA
St Laurent
Allan Crawford Associates
7018 Cote De Liesse
514-731-8564

NOVA SCOTIA, CANADA
Dartmouth
Allan Crawford Associates
800 Windmill Rd, Unit No 120
902-463-9360

GOULD MODICON DIV
PO Box 83 S V S
Andover, MA 01810
617-475-4700
Contact: John Pemble
■ Products & Services
Message switchers
Acoustic couplers
Modems, limited distance
Modems, multipoint
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Data entry terminals
Interactive terminals
Portable data entry terminals
Terminal interfaces
Applications packages
Code/protocol conversion programs
Local network software
Operating systems
Computer/communications interfaces
Switches, data communications: automatic
Switches, data communications: manual
Educational services
Maintenance organizations

GRANGER ASSOCIATES
3101 Scott Blvd
Santa Clara, CA 95051
408-727-3101
Contact: Rick Green
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, group band
Microwave/laser systems
Technical control centers
Branch Sales Offices:

GA Snellville
E Williams
1968 Tanglewood Dr
404-972-7200

OK Oklahoma City
C Alexander
6207 NW Expwy
405-721-6141

GRAPHIC CONTROLS
COATED PROD DIV
PO Box 1309; 189 Van Rensselaer St
Buffalo, NY 14240
716-853-7500
Contact: Michael Lipuma
■ Products & Services
Paper for terminals
Branch Sales Offices:

CA Atlanta
Graphic Controls;Coated Prod Div
340 Interstate
404-955-7053

CA Irvine
Graphic Controls;Coated Prod Div
17819 Gillette St
714-540-8313

CA Santa Clara
Graphic Controls;Coated Prod Div
3105 El Camino Real
408-727-7358

CO Evergreen
Graphic Controls;Coated Prod Div
5632 South Burro Ln
816-229-1077

IL Schaumburg
Graphic Controls;Coated Prod Div
Box 94924
800-828-7978

MD College Pk
Graphic Controls;Coated Prod Div
Box 410
301-779-0598

MA Accord
Graphic Controls;Coated Prod Div
Box 119
800-828-7978

MI Southfield
Graphic Controls;Coated Prod Div
Box 343
800-828-7978

NY Pt Washington
Graphic Controls;Coated Prod Div
9 Durbyan St
800-462-7332

TX Richardson
Graphic Controls;Coated Prod Div
777 S Central Exprwy
214-235-1237

GRAPHNET INC
329 Alfred Ave
Teaneck, NJ 07666
201-837-5100
Contact: Evelyn Shields
■ Products & Services
Facsimile-service carriers
Message (including telegraph) carriers
Packet-switching carriers
Value-added carriers
Branch Sales Offices:

CA San Francisco
Graphnet Inc
1750 Montgomery St
415-434-1537

DC Washington
Graphnet Inc
1625 K St NW
202-659-0400

IL Oak Brook
Graphnet Inc
2805 Butterfield Rd
312-655-0078

MI Southfield
Graphnet Inc
29755 Greenfield Rd, 1 Northland Plaza
313-569-7830

NY New York
Graphnet Inc
11 Broadway
212-943-0660

GR ELECTRONICS LTD.
1640 Fifth St
Santa Monica, CA 90401
213-395-4774
Contact: Joan Stamm
■ Products & Services
Data entry terminals
Portable data entry terminals

GRINNELL FIRE PROTECTION SYSTEMS CO
10 Dorrance St
Providence, RI 02903
401-456-5600
Contact: Albert Beck
■ Products & Services
Fire detection/protection equipment
Branch Sales Offices:

RI Cranston
1467 Elmwood Ave
781-3800

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

GRINNELL SYSTEMS
2159 Bering Dr
San Jose, CA 95131
408-263-9920
Contact: Jim Hixson
Branch Sales Offices:

CO Denver
PAR Associates
10515 E 40th St
303-371-4140

IL Oak Park
Corlett & Associates
110 W Madison
312-626-6726

MD Linthicum Hts
KD Associates
201 Benton Ave
301-636-1151

MA Winchester
J&J Associates
225 East St
617-729-5770

MA Waltham
Techexport Inc
244 2nd St
617-890-6507

NY Syracuse
Naco Electronics
Box 276
315-699-2651

NC Charlotte
Highsmith Co
1141 Hawthorne Lane
704-333-7743

OH Dayton
Ashby Associates
4130 Linden Ave
513-252-5627

PA Media
Klinetics Inc
9 W Third St
215-565-5388

TX Dallas
USDATA Associates
14241 Proton Rd
214-662-9633

GRUMMAN DATA SYSTEMS CORP
150 Crossways PK W
Woodbury, NY 11797
516-349-5111
Contact: Dave Schwartz
■ Products & Services
Applications packages
Custom programs
Microfilm equipment, systems and services
Data communications consultants
Maintenance organizations
Branch Sales Offices:

NY Bethpage
Grumman Data Systems Corp
1111 Stewart Ave
516-575-6200

VA Arlington
Grumman Data Sytems Corp
1700 N Moore St
703-528-5900

GTE DIRECTORIES CORP
1865 Miner St.
Des Plaines, IL 60016
312-391-5100
Contact: D L Ventura

GTE FIBER OPTICS COMMS DIV
1395 Charleston
Mountain View, CA 94043
415-962-8630
Contact: L Corsello
■ Products & Services
Satellite carriers
Specialized carriers
Telephone companies
Concentrators
Multiplexers, time division
Lightwave (fiber optic) systems
Branch Sales Offices:

CA San Carlos
GTE Lenkurt
1105 County Rd
415-595-3000

GA Atlanta
Fiber Optics Com Div
5780 Peachtree-Dunwoody Rd NE
404-256-3000

IL Arlington Heights
Fiber Optics Com Div
120 West Eastman St
312-398-6700

TX Plano
Fiber Optics Com Div
542 Haggard St
214-422-4305

VA Fairfax
Fiber Optics Com Div
301 Williams Dr
703-698-1850

GTE LENKURT INC
1105 County Rd
San Carlos, CA 94070
415-595-3000
Contact: John Stockford
■ Products & Services
Message (including telegraph) carriers
Satellite carriers
Specialized carriers
Telephone companies
Lightwave (fiber optic) systems
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband group (to 50 kb/s)
MIL 188C adapters
Branch Sales Offices:

CA San Carlos
GTE Lenkurt Inc
1105 County Rd
415-595-3000

GA Atlanta
GTE Lenkurt Inc
5780 Peachtree Dunwoody Rd NE
404-256-3000

IL Arlington Heights
GTE Lenkurt Inc
120 W Eastman St
312-398-6700

TX Wayco
GTE Lenkurt Inc
542 Haggart St
214-422-4305

VA Fairfax
GTE Lenkurt Inc
3015 Williams Dr
703-698-1850

GTE SATELLITE CORP
One Stamford Forum
Stamford, CT 06904
203-357-2000
Contact: R Cruz
■ Products & Services
Satellite carriers

GTE SYLVANIA SYSTEMS/VOICE DIGITIZERS
77 "A" St
Needham Heights, MA 02194
617-449-2000
Contact: F T Seery
■ Products & Services
Digitized-voice processors
Voice digitizers
Branch Sales Offices:
CA Mountain View
GTE Sylvania/Voice Digitizers
100 Ferguson Dr
415-966-9111
MA Needham
GTE Sylvania/Voice Digitizers
77 "A" St
617-449-2000
NJ Tilton Falls
GTE Sylvania/Voice Digitizers
766 Shrewsbury Ave
201-842-7000
VA Arlington
GTE Sylvania/Voice Digitizers
1800 N Kent St
703-247-9200

GTE TELENET COMMUNICATIONS CORP
8229 Buone Blvd
Vienna, VA 21180
703-442-1000
Contact: Henry R Nothhaft
■ Products & Services
Message (including telegraph) carriers
Packet-switching carriers
Value-added carriers
Concentrators
Multiplexers, statistical (intelligent)
Packet processors
Remote network processors
Network management centers
Technical control centers
DDP systems
Minicomputers
Message Systems (Video)
Interactive terminals
Portable data entry terminals
Video data terminals (KSR)
Computer/communications interfaces
Data security devices: personal identification systems
Protocol converters
Switches, data communications: automatic
Branch Sales Offices:
CA Garden Grove
GTE Telenet Commun Corp
12832 Valley View
714-891-4481
CA Cupertino
GTE Telenet Commun Corp
20370 Town Center Ln
408-255-6450
CA Monica
GTE Telenet Commun Corp
3000 Oceanpark Blvd
213-450-0606
CO Englewood
GTE Telenet Commun Corp
5680 S Syracuse
303-741-2303
FL Tampa
GTE Telenet Commun Corp
406 Reo Rd
813-872-7555
GA Atlanta
GTE Telenet Commun Corp
One Perimeter Way NW
404-955-9025
GA Atlanta
GTE Telenet Commun Corp
20 Perimeter Center East
404-396-1515
IL Chicago
GTE Telenet Commun Corp
2 North Lasalle St
312-782-6119
MA Boston
GTE Telenet Commun Corp
One Federal St
617-451-0048
MI Dearborn
GTE Telenet Commun Corp
One Parkland Blvd
313-336-8050
MN Minneapolis
GTE Telenet Commun Corp
5200 W 73rd St
612-831-2127
MO St Louis
GTE Telenet Commun Corp
111 Westport Plaza
314-434-1730
NJ Marlton
GTE Telenet Commun Corp
2001A Greentree
609-983-9600
NY New York
GTE Telenet Commun Corp
One Penn Plaza
212-594-6644
PA Pittsburgh
GTE Telenet Commun Corp
875 Greentree Rd
412-921-8736
TX Houston
GTE Telenet Commun Corp
5100 Westheimer
713-871-1243
TX Dallas
GTE Telenet Commun Corp
12201 Merit Dr
214-661-3014
VA Arlington
GTE Telenet Commun Corp
1700 N Moore St
703-243-7510

HALCYON
2121 Zanker Rd
San Jose, CA 95131
408-293-9970
Advertising pages 35,81
Contact: E M Stein
■ Products & Services
Multiplexers, time division
Multiplexers, statistical (intelligent)
Modems, limited distance
Modems, multipoint
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Response-time monitors
Branch Sales Offices:
CA San Jose
R Blama
2001 Gateway Pl
408-298-2065
DE Wilmington
C Hagerty
1600 Pennsylvania Ave
302-654-2611
GA Atlanta
R Davis
8375 Dunwoody Pl
404-998-2210
IL Bensenville
C Cutsforth
205 W Grand Ave
312-860-7400
NJ Piscataway
M Tesoriere
255 Old New Brunswick Rd
201-981-0650
TX Grapevine
R Davis
1000 Main St
817-481-7548

HAMILTON/AVNET ELECTRONICS
10590 Washington Blvd.
Culver City, CA 90230
213-558-2000
Contact: Jim Harper

HAMILTON SORTER COMPANY INC
3158 Production Dr
Fairfield, OH 45014
513-874-9498
Contact: Gordon F Kwiecinski
■ Products & Services
Furniture, cabinets, terminal enclosures

HARBOR ELECTRONICS
650 Danbury Rd
Ridgefield, CT 06877
203-438-9625
Advertising page 153
Contact: Peter T Henderson
■ Products & Services
Lightwave (fiber optic) systems
Cables, electrical prefabricated extending
Computer/communications interfaces
Switches, data communications: manual
Branch Sales Offices:
CA Santa Clara
Harbor Electronics
2220 Bohannon Dr
408-249-9888
IL Rolling Meadows
Sumer Inc
1675 Hicks Rd
312-991-8500
MA Newburyport
Bel-Tech Sales
191 Merrimac St
617-465-0644

HARRIS CORP
COMPOSITION SYSTEMS DIV
505 John Rodes Blvd
Melbourne, FL 32901
305-242-5000
Contact: S S Skogen
Contact: H R Evans

■ Products & Services
Disk packs
Tape, magnetic
Tape punch/reader, paper
Data entry terminals
Interactive terminals
Remote job entry terminals
Terminal controllers
Terminal interfaces
Video data terminals (RO)
Word processors, communicating

Branch Sales Offices:

CA Culver City
Composition Systems Div
5839 Green Vally Cir
213-641-5032

DC Washington
Composition Systems Div
2600 Virginia Ave
202-342-3977

FL Clearwater
Composition Systems Div
1345 Missouri Ave
813-461-7400

MA Burlington
Composition Systems Div
5 Old Concord Rd
617-273-1020

NJ Roseland
Compositions Systems Div
65 Livingston Ave
201-994-2020

HARRIS CORP
COMPUTER SYSTEMS DIV
2101 W Cypress Creek Rd
Fort Lauderdale, FL 33309
Contact: J J Stives
■ Products & Services
DDP systems
Minicomputers
DDP systems software

Branch Sales Offices:

CA San Mateo
Harris Computer Systems Div
1660 S Amphlett Blvd
415-349-5037

CA Costa Mesa
Harris Computer Systems Div
1503 S Coast Dr
714-957-6557

CA Culver City
Harris Computer Systems Div
59 Green Valley Cir
213-641-5032

CA San Diego
Harris Computer Systems Div
7801 Mission Center Ct
714-297-9254

CO Englewood
Harris Computer Systems Div
5660 S Syracuse Cir
303-770-1663

DC Washington
Harris Computer Systems Div
2600 Virginia Ave NW
202-342-3952

FL Ft Lauderdale
Harris Computer Systems Div
2101 Cypress Creek Rd
305-974-1700

FL Palm Bay
Harris Computer Systems Div
50 Woodlake Dr W
305-727-6390

GA Atlanta
Harris Computer Systems Div
875 Johnson Ferry Rd NE
404-256-4000

IL Rosemont
Harris Computer Systems Div
6400 Shaefer Ct
312-692-4960

KS Shawnee Mission
Harris Computer Systems Div
6811 West 63
913-384-0882

MA Burlington
Harris Computer Systems Div
5 Old Concord Rd
617-273-1020

MN Bloomington
Harris Computer Systems Div
2850 Metro Dr
612-854-7375

MO Brentwood
Harris Computer Systems Div
1750 Brentwood Blvd
314-961-9927

NY New York
Harris Computer Systems Div
675 Third Ave
212-986-7600

NC Raleigh
Harris Computer Systems Div
3000 Highwoods Blvd
919-872-7962

OH Cincinnati
Harris Computer Systems Div
4015 Executive Park Dr
513-769-6100

PA Pittsburgh
Harris Computer Systems Div
875 Greentree Rd
412-928-3660

PA King of Prussia
Harris Computer Systems Div.
120 S Warner Rd
609-779-8040

TX Dallas
Harris Computer Systems Div
17120 Dallas Pkwy
214-934-4202

TX Houston
Harris Computer Systems Div
7000 Regency Sq Blvd
713-789-0344

VA Springfield
Harris Computer Systems Div
8001 Forbes Pl
301-762-5600

WA Bellevue
Harris Computer Systems Div
10800 NE 8 St
206-453-0303

WI Madison
Harris Computer Systems Div
6314 Odana Rd
608-271-9559

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

HARRIS CORP
CONTROLS DIV
Box 430
Melbourne, FL 32901
305-727-5600
Contact: R C Owen
■ Products & Services
Multiplexers, time division
Modems, voice-grade, low-speed (0-1,200 b/s)
Voice digitizers

HARRIS CORP
DATA COMMUNICATIONS DIV
16001 Dallas Parkway; PO Box 400010
Dallas, TX 75240
214-386-2000
Contact: Neal Dempsey III
■ Products & Services
DDP systems
Batch terminals
Data entry terminals
Programmable terminals
Remote job entry terminals
Video data terminals (KSR)

Branch Sales Offices:

AZ Phoenix
Harris Data Communications Division
2942 N 24th St
602-956-9159

AR Little Rock
Harris Data Communications Division
Woodlane St
501-376-3422

CA Costa Mesa
Harris Data Communications Division
1503 S Coast Dr
714-957-6557

CA Culver City
Harris Data Communications Division
5839 Green Valley Circle
213-641-5032

CA San Mateo
Harris Data Communications Division
1660 S Amphlett
415-573-5200

CO Englewood
Harris Data Communications Division
5660 S Syracuse Circle
303-771-4380

CT Hamden
Harris Data Communications Division
1890 Dixwell Ave
203-288-3808

CT Wethersfield
Harris Data Communications Division
415 Silas Deane Hwy
203-563-6301

DC Washington
Harris Data Communications Inc
2600 Virginia Ave
202-342-3970

FL Miami
Harris Data Communications Division
18425 NW 2nd
305-592-7424

FL Orlando
Harris Data Communications Division
3203 Lawton
305-896-3530

GA Atlanta
Harris Data Communications Division
875 Johnson Ferry Rd
404-256-4000

IL Rosemont
Harris Data Communications Division
6400 Shafer Ct
312-692-4960

IL Springfield
Harris Data Communications Division
1045 Outer Park Dr
217-787-9936

IN Indianapolis
Harris Data Communications Division
2421 Production Dr
317-241-8377

KS Shawnee Mission
Harris Data Communications Division
6811 W 63rd
913-384-5611

LA Metarie
Harris Data Communications Division
2601 N Hullen Ave
504-831-1548

MD Baltimore
Harris Data Communications Division
7133 Rutherford Rd
301-944-7767

MA Burlington
Harris Data Communications Division
5 Old Concord Rd
617-273-1020

MI Troy
Harris Data Communications Division
5700 Crooks Rd
313-879-2800

MN Bloomington
Harris Data Communications Division
2850 Metro Dr
612-854-5695

MO St Louis
Harris Data Communications Division
1750 Brentwood Blvd
314-961-5570

NE Omaha
Harris Data Communications Division
10840 6 Old Mill Rd
402-330-2020

NJ Mount Laurel
Harris Data Communications Division
307 Fellowship Rd
609-254-7554

NJ Roseland
Harris Data Communications Division
65 Livingston Ave
201-994-2020

NM Albuquerque
Harris Data Communications Division
209A Palomas Dr
505-255-1113

NY New York
Harris Data Communications Division
675 Third Ave
212-986-7600

NY Rochester
Harris Data Communications Division
120 Allens Creek Rd
716-275-9280

NC Raleigh
Harris Data Communications Division
3000 Highwoods Blvd
919-872-7962

OH Cincinnati
Harris Data Communications Division
4015 Executive Park Dr
513-765-6100

OH Cleveland
Harris Data Communications Division
55 Public Sq
216-771-1718

OH Worthington
Harris Data Communications Division
300 E Wilson Bridge
614-885-5967

OK Oklahoma City
Harris Data Communications Division
2025 S Nicklas
405-947-4625

OR Portland
Harris Data Communications Division
700 NE Multnomah
503-239-4640

PA Pittsburgh
Harris Data Communications Division
875 Greentree Rd
412-928-3665

TN Nashville
Harris Data Communications Division
107 Music City Circle
615-889-0988

TX Austin
Harris Data Communications Division
5555 N Lamar Pkwy
512-454-8861

TX Austin
Harris Data Communications Division
5555 N Lamar Pkwy
512-454-8861

TX Dallas
Harris Data Communications Division
17120 Dallas Pkwy
214-934-4202

TX Houston
Harris Data Communications Division
7000 Regency Sq
713-977-0939

UT Salt Lake City
Harris Data Communications Division
407 Lawndale
801-486-3429

WA Bellevue
Harris Data Communications Division
10800 NE 8th St
206-455-5523

WV West Allis
Harris Data Communications Division
1201 W Lincoln Ave
414-543-6240

HARRIS DIGITAL TELEPHONE SYSTEMS DIVISION
One Commerce Blvd
Novato, CA 94947
415-472-9990
Contact: R Carr
■ Products & Services
Branch exchanges—private (PBX, PABX, etc.)
Lightwave (fiber optic) systems

Branch Sales Offices:

GA Decatur
Harris Digital Telephone Systems
612 Decatur Federal Bank
404-373-3148

IN Indianapolis
Harris Digital Telephone Systems
2421 Production Dr
317-241-3006

NJ Mount Laurel
Harris Digital Telephone Systems
307 Fellowship Rd
609-254-7554

HARRIS CORP, FARINON TRANSMISSION SYSTEMS DIV
1691 Bayport Ave
San Carlos, CA 94070
415-592-4120
Contact: Chuck Barrera
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Lightwave (fiber optic) systems
Microwave/laser systems

Branch Sales Offices:

CA Santa Cruz
Farinon Transmission Systems Div
325 Plateau Ave
415-425-0185

CO Loveland
Farinon Transmission Systems Div
Box 912
303-669-7555

GA Roswell
Farinon Transmission Systems Div
626 Holcomb Bridge Rd
404-992-8048

IL Lisle
Farinon Transmission Systems Div
4725 River Dr
312-692-4960

KS Overland Park
Farinon Transmission Systems Division
Box 4738
913-492-6776

NJ Bridgewater
Farinon Transmission Systems Division
Box 6802
201-469-6740

NY Mamaroneck
Farinon Transmission Systems Div
4 McKennan Pl
914-834-1277

TX Houston
Farinon Transmission Systems Division
720 N Post Oak Rd
713-688-5560

QUEBEC, CANADA
Dorval
Farinon Canada
657 Orly Av
514-636-0974

HAWAIIAN TELEPHONE CO
7555 W Hampden Ave
Honolulu, HI 80231
808-546-2027
Contact: Ronald Komata
■ Products & Services
Facsimile-service carriers
Message (including telegraph) carriers
Packet-switching carriers
Telephone companies
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX, EPBX, etc.)

Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Port sharing units
Acoustic couplers
Channel service units
Lightwave (fiber optic) systems
Line drivers
Microwave/laser systems
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband group (to 50 kb/s)
MIL 188C adapters
Technical control centers
Local networks
Cassette drives
Disk drives, floppy
Tape punch/reader, paper
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Data access arrangement devices
Data jacks and plugs
Furniture, cabinets, terminal enclosures
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: manual
Data communications consultants
Maintenance organizations

HAYES MICROCOMPUTER PRODUCTS INC
5835A Peachtree Corners East
Norcross, GA 30092
404-449-8791
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Branch Sales Offices:
CA Sunnyvale
Computer Potentials
484 Oakmead Pkwy
408-738-1740
CA Santa Ana
Micro Distributors Inc
2612 Croddy Way
800-854-6801
MD Rockville
Micro Distributors Inc
11794 Parklawn Dr
800-638-6621
MA Sudbury
Consumer Computer Marketing
55 Union Ave
617-443-5128
MN St Louis
High Technology
4136 Seven Hills Dr
800-325-0600
OH Columbus
High Technology
3288 Morse Rd
614-475-8668
OK Oklahoma City
High Technology
8001 N Classen Blvd
405-840-9900
WA Bellevue
Sigma Distributing
835-839 106th NE
206-454-6307

Want even more information on products?
Turn to **UpDate Service Card, page 201.**

HAZELTINE CORP
284 E Pulaski Rd
Greenlawn, NY 11740
516-549-8800
Contact: Ed Jeran
■ Products & Services
Video data terminals (KSR)
Branch Sales Offices:
CA San Mateo
Hazeltine Corp
1650 S Amphlett Blvd
415-570-7081
CA Century City
Hazeltine Corp
1801 Ave of Stars
213-553-1811
GA Atlanta
Hazeltine Corp
404-952-8444
NY New York
Hazeltine Corp
10 East 53rd St
212-752-3377
TX Dallas
Hazeltine Corp
7616 LBJ Freeway
214-980-9825
VA Arlington
Hazeltine Corp
1725 Jefferson Davis HW
703-892-1800
AUSTRALIA
North Sydney
Mitsui Computer Systems (Aust) Pty
7 West St
2 929 9921
AUSTRIA
Vienna
Neue Organisationsmaschinen Ges mbh (NOG)
Untere Donavstrasse 13-15
222 248 414
BELGIUM
B-1030 Brussels
Geveke Electronics
Anatole Francestraat 119/121
2 241 4550
CHILE
Santiago
Sociedad Nacional de Procesamiento de Datos (SONDA) LTDA
Teatinos 554
2 62277
DENMARK
4600 Koge
Trend Electronics
Tangmosevej 99
3 652 345
ENGLAND
Isleworth, Middlesex
Hazeltine Ltd
292, Worton Rd
TW7 6EL 1 568 1851
FRANCE
92120 Montrouge
Geveke Electronique SA
85-87 Avenue Jean-Jaures
1 654 1582
GERMANY, WEST
4000 Duesseldorf
Geveke Elektronik GmbH
Schlaegelstrasse 9
211 773 082
HONG KONG
Hong Kong
Oriental Data Systems Ltd
11/F Hutchison House
5 243 121
ISRAEL
Tel Aviv
Alpha Terminals Ltd
41 Hertselya Road
3 47 61 79
ITALY
20124 Milano
SEGI SRL
Via Timavo 12
2.60.73.255
JAPAN
Tokyo 160
Protech Inc
7-22-43 Nishi-Shinjuku
3 365 0751
MEXICO
Mexico 19 D F
Industrias Digitales SA
Plateros No 7-116
905-524-5132
NETHERLANDS
Amsterdam
Geveke Electronica BV
Kabelweg 25
20 802 802
NEW ZEALAND
Wellington
CBL Datacomm
89 Courtenay Pl
4-857-939
NORWAY
Oslo
Alf G Johnsen A/S
Brenneriveien 11
2-111-250
SPAIN
Barcelona
Infotecnos SA
Avda Infanta Carlota 191
3 322 0303
SWITZERLAND
3074 Muri
Comp Sys & Peripherals AEG
Breichtendorfer Str 7
31 52 7786
TAIWAN
Taipei 105
Multitech International Corp
977 Min Shen E Rd
2 768 1232

HEATH CO
Benton Harbor, MI 49022
616-982-3200
■ Products & Services
Earth stations
Modems, voice-grade, low-speed (0-1,200 b/s)
Add-on main memory
Add-on auxilliary memory
Disks, floppy

Disk drives, large
Disk packs
Programmable terminals
Teleprinters, impact
Video data terminals (KSR)
Word processors, communicating
Applications packages
Transport software
Operating systems
Personal computer communications software
Word processing packages
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers
Educational services
Maintenance organizations

Branch Sales Offices:

AZ Phoenix
Heathkit Electronic Center
2727 W Indian School Rd
602-279-6247

CA Los Angeles
Heathkit Electronic Center
2309 S Flower St
213-749-0261

CA La Mesa
Heathkit Electronic Center
8363 Center Dr
714-461-0110

CA Anaheim
Heathkit Electronic Center
330 E Ball Rd
714-776-9420

CA Redwood City
Heathkit Electronic Center
2001 Middlefield Rd
415-365-8155

CA Woodland Hills
Heathkit Electronic Center
22504 Ventura Blvd
213-883-0531

CA El Cerrito
Heathkit Electronic Center
6000 Potrero Ave
415-236-8870

CA Pomona
Heathkit Electronic Center
1555 N Orange Grove Ave
714-623-3543

CA Campbell
Heathkit Electronic Center
2350 S Bascom Ave
408-377-8920

CA Sacramento
Heathkit Electronic Center
1860 Fulton Ave
916-486-1575

CO Denver
Heathkit Electronic Center
5940 W 38 Ave
303-422-3408

CT Avon
Heathkit Electronic Center
395 W Main St
203-678-0323

FL Hialeah
Heathkit Electronic Center
4705 W 16 Ave
305-823-2280

FL Tampa
Heathkit Electronic Center
4019 W Hillsborough Ave
813-886-2541

GA Atlanta
Heathkit Electronic Center
5285 Roswell Rd
404-252-4341

IL Chicago
Heathkit Electronic Center
3462-66 W DeVon Ave
312-583-3920

IL Downers Grove
Heathkit Electronic Center
224 Ogden Ave
312-852-1304

IN Indianapolis
Heathkit Electronic Center
2112 E 62 St
317-257-4321

KS Mission
Heathkit Electronic Center
5960 Lamar Ave
913-362-4486

KY Louisville
Heathkit Electronic Center
12401 Shelbyville Rd
502-245-7811

LA Kenner
Heathkit Electronic Center
1900 Veterans Memorial Hwy
504-467-6321

MD Rockville
Heathkit Electronic Center
5542 Nicholson Ln
301-881-5420

MD Baltimore
Heathkit Electronic Center
1713 E Joppa Rd
301-661-4446

MA Wellesley
Heathkit Electronic Center
165 Worcester Ave
617-237-1510

MA Peabody
Heathkit Electronic Center
242 Andover St
617-531-9330

MI Detroit
Heathkit Electronic Center
18645 W Eight Mile Rd
313-535-6480

MI E Detroit
Heathkit Electronic Center
18149 E 8 Mile Rd
313-772-0416

MN Hopkins
Heathkit Electronic Center
101 Shady Oak Rd
612-938-6371

MN St Paul
Heathkit Electronic Center
1645 White Bear Ave
612-778-1211

MO Bridgeton
Heathkit Electronic Center
3794 McKelvey Rd
314-291-1850

NE Omaha
Heathkit Electronic Center
9207 Maple St
402-391-2071

NJ Fair Lawn
Heathkit Electronic Center
35-07 Broadway
201-791-6935

NJ Ocean
Heathkit Electronic Center
1013 State Hwy #35
201-775-1231

NY Jericho LI
Heathkit Electronic Center
15 Jericho Tnpk
516-334-8181

NY Amherst
Heathkit Electronic Center
3476 Sheridan Dr
716-835-3090

NY Rochester
Heathkit Electronic Center
937 Jefferson Rd
716-244-5470

NY No White Plains
Heathkit Electronic Center
7 Reservoir Rd
914-761-7690

OH Cleveland
Heathkit Electronic Center
28100 Chagrin Blvd
216-292-7553

OH Woodlawn
Heathkit Electronic Center
10133 Springfield Pike
513-771-8850

OH Columbus
Heathkit Electronic Center
2500 Morse Rd
614-475-7200

OH Toledo
Heathkit Electronic Center
48 S Byrne Rd
419-537-1887

OK Oklahoma City
Heathkit Electronic Center
2727 NW Exprwy
405-848-7593

PA Philadelphia
Heathkit Electronic Center
6318 Roosevelt Blvd
215-288-0180

PA Pittsburgh
Heathkit Electronic Center
3482 Wm Penn Hwy
412-824-3564

PA Frazer
Heathkit Electronic Center
630 Lancaster Pike
215-647-5555

RI Warwick
Heathkit Electronic Center
558 Greenwich Ave
401-738-5150

TX Houston
Heathkit Electronic Center
1704 W Loop N
713-869-5263

TX Dallas
Heathkit Electronic Center
2715 Ross Ave
214-826-4053

TX San Antonio
Heathkit Electronic Center
7111 Blanco Rd
512-341-8876

TX Fort Worth
Heathkit Electronic Center
6825-A Green Oaks Rd
817-737-8822

UT Midvale
Heathkit Electronic Center
58 E 7200 S
801-566-4626

VA Virginia Beach
Heathkit Electronic Center
1055 Independence Blvd
804-460-0997

VA Alexandria
Heathkit Electronic Center
6201 Richmond Hwy
703-765-5515

WA Seattle
Heathkit Electronic Center
505 8th Ave
206-682-2172

WA Vancouver
Heathkit Electronic Center
516 SE Chkalor Dr
206-254-4441

WI Milwaukee
Heathkit Electronic Center
5215 W Fond du Lac Ave
414-873-8250

ONTARIO, CANADA
Mississauga ON
Heathkit Electronic Center
1480 Dundas Hwy E
416-277-3191

HEKIMIAN LABS INC
9298 Gaither Rd
Gaithersburg, MD 20877
301-840-1217
Contact: Robert L Fredrick
■ Products & Services
Electrical-parameters test equipment
Network management centers
Technical control centers
Selection & transfer equipment: monitor & test switching equipment
Branch Sales Offices:
CA Mt View
CSS Telecommunications
2680 Bayshore Frontage Rd
415-964-4335
CA Los Alamitos
CSS Telecommunications
10915 Bloomfield St
213-594-4574
CO Denver
Data Systems Marketing
955 Bannock St
303-573-5133
CT Mt Carmel
Scientific Devices
3074 Whitney Ave
203-248-9361
FL West Palm Beach
Hekimian Laboratories Inc
3814 Shelley Rd
305-683-9381
GA Stone Mountain
General Technology of Atlanta
Box 1048
404-498-2341
IL Arlington Heights
Reshal Assoc
219 W University Dr
312-398-7660
MD Ashton
Blackwood Associates
17904 Ednor View Terrace
301-924-2858
MA Waltham
Scientific Devices
181 West St
617-890-2252
MI Brighton
Reshal Assoc
6913 Wide Valley Dr
313-231-2001
MN Minneapolis
Reshal Assoc
10521 Lakefall Dr
612-941-8697
NJ Englewood Cliffs
Scientific Devices
210 Sylvan
201-871-3916
NY DeWitt
DB Associates
Box 14
315-446-0220
OH Aurora
Reshal Associates
1240 Pioneer Trl
216-562-9872
TN Memphis
Insight Sales
2899 Southway Dr
901-365-7806
VA Patrick Springs
Hekimian Laboratories
Route 1, Box 380-A
703-629-8227
WA Redmond
CSS Telecommunications
14828 NE 31st Circle
206-881-7473

ENGLAND
Tring, Hertfordshire
Genl Audio & Datacomm
70-80 Akeman St
4444-282-4011

FRANCE
Le Chesnay
Welect
4 Rue de la Bourboule
955-4787

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

HELLMAN ASSOCIATES
299 California Ave
Palo Alto, CA 94306
415-328-4091
Contact: Martin E Hellman
■ Products & Services
Data security devices: encoder/decoders
Data communications consultants
Educational services

HENDRIX
670 N Commercial St
Manchester, NH 03101
603-669-9050
Contact: Stephen R Silver
■ Products & Services
Electronic mailboxes
Data entry terminals
Teletypewriters
Branch Sales Offices:
CA Arcadia
Hendrix Electronics
351 E Foothill Blvd
213-357-7911
GA Atlanta
Hendrix Electronics
6145 Barfield Rd
404-252-4902
NY New York
Hendrix Electronics
41 East 42 St
TX Houston
Hendrix Inc
6250 Westpark Pl
713-783-3900
TX Dallas
Hendrix Inc
1545 W Mockingbird
VA Arlington
Hendrix Electronics
3030 N Fairfax Dr
703-528-4000

HETRA COMPUTER & COMMUNICATIONS INDUSTRIES INC
1151 S Eddie Allen Rd
Melbourne, FL 32901
305-723-7731
Contact: Bill Pearce
■ Products & Services
Packet processors
Line drivers
MIL 188C adapters
Minicomputers
Data entry terminals
Programmable terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Terminal controllers
Computer/communications interfaces
Lease and resale organizations
Maintenance organizations

HEWLETT-PACKARD CO
1501 Page Mill Rd
Palo Alto, CA 94304
415-856-1501
■ Products & Services
Front-end processors
Remote network processors
Lightwave (fiber optic) systems
Modems, limited distance
Data content monitors
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Response-time monitors
Network management centers
Technical control centers
DDP systems
Local networks
Minicomputers
Database processors
Add-on main memory
Cartridges
Cartridge drives
Disk drives, floppy
Disk drives, large
Disk packs
Floppy disk recorders
Tape drives, magnetic
Tape punch/reader, paper
Badge readers
Bar code readers
Batch terminals
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Cables, lightwave (optical fiber)
Computer/communications interfaces
Error controllers
Paper for terminals
Power supplies
Ribbons and supplies for terminals and printers
Maintenance organizations
Branch Sales Offices:
AL Huntsville
Hewlett-Packard
8290 Whitesburg Dr SE
205-881-4591
AZ Phoenix
Hewlett-Packard
2336 E Magnolia St
602-244-1361
AZ Tucson
Hewlett-Packard
2424 Aragon Rd
602-294-3148

CA Fullerton
Hewlett-Packard
1430 E Orangethorpe Ave
714-870-1000

CA North Hollywood
Hewlett-Packard
3939 Lankershim Blvd
213-877-1282

CA Los Angeles
Hewlett-Packard
Box 92105
213-970-7500

CA Santa Clara
Hewlett-Packard
3003 Scott Blvd
408-249-7000

CA Sacramento
Hewlett-Packard
646 W North Market Blvd
916-929-7222

CA San Diego
Hewlett-Packard
9606 Aero Dr; Box 23333
714-279-3200

CO Englewood
Hewlett-Packard
5600 DTC Parkway
303-771-3455

CT Wallingford
Hewlett-Packard
47 Barnes Industrial Rd
203-265-7801

FL Ft Lauderdale
Hewlett-Packard
Box 24210
305-731-2020

FL Orlando
Hewlett-Packard
Box 13910; 6177 Lake Ellenor Dr
305-859-2900

FL Pensacola
Hewlett-Packard
6425 Pensacola Blvd North Bld 1
904-476-8422

GA Atlanta
Hewlett-Packard
Box 105005
404-955-1500

GA Warner Robins
Hewlett-Packard
Box 2103
912-922-0449

HI Honolulu
Hewlett-Packard
2875 S King St
808-955-4455

IL Rolling Meadows
Hewlett-Packard
5201 Tollview Dr
312-255-9800

IN Indianapolis
Hewlett-Packard
7301 N Shadeland Ave
317-842-1000

IA Iowa City
Hewlett-Packard
2415 Heinz Rd
319-338-9466

LA Kenner
Hewlett-Packard
3229-39 Williams Blvd
504-443-6201

MD Hanover
Hewlett-Packard
7121 Standard Dr
301-796-7700

MD Rockville
Hewlett-Packard
2 Choke Cherry Rd
301-948-6370

MA Lexington
32 Hartwell Ave
617-861-8960

MI Farmington Hills
Hewlett-Packard Co
23855 Research Dr
313-476-6400

MN St Paul
Hewlett-Packard Co
2025 W Larpenteur Ave
612-536-0700

MO Kansas City
Hewlett-Packard Co
11131 Colorado Ave
816-763-8000

MO St Louis
Hewlett-Packard Co
1024 Executive Pkwy
314-878-0200

NJ Paramus
Hewlett-Packard Co
W 120 Century Rd
201-265-5000

NJ Eatontown
Hewlett-Packard Co
Crystal Brook Prof Bldg
201-542-1384

NM Albuquerque
Hewlett-Packard Co
Box 11634; 11300 Lomas Blvd NE
505-292-1330

NM Las Cruces
Hewlett-Packard Co
156 Wyatt Dr
505-526-2484

NY Albany
Hewlett-Packard Co
6 Automation La
518-458-1550

NJ Paramus
Hewlett-Packard Co
650 Perinton Office Pk
716-223-9950

NY Syracuse
Hewlett-Packard Co
5858 E Molloy Rd
315-454-2486

NY Woodbury
Hewlett-Packard Co
3 Crossways Park W
516-921-0300

NC Greenboro
Hewlett-Packard Co
5605 Roanne Way
919-852-1800

OH Cleveland
Hewlett-Packard Co
16500 Sprague Rd
216-243-7300

OH Dayton
Hewlett-Packard Co
330 Progress Rd
513-859-8202

OH Columbus
Hewlett-Packard Co
962 Crupper
614-436-1041

OK Oklahoma City
Hewlett-Packard Co
6301 N Meridan Ave
405-721-0200

OR Tualatin
Hewlett-Packard Co
17890 SW Lower Boones Ferry Rd
503-620-3350

PA Pittsburgh
Hewlett-Packard Co
111 Zeta Dr
412-782-0400

PA King of Prussia
Hewlett-Packard Co
1021 8th Ave
215-265-7000

SC Columbia
Hewlett-Packard Co
6940 O N Trenholm Rd
803-782-6493

TN Memphis
Hewlett-Packard Co
3070 Directors Row
901-346-8370

TX Richardson
Hewlett-Packard Co
201 E Arapaho Rd
214-231-6101

TX Houston
Hewlett-Packard Co
10535 Harwin Dr
713-776-6400

TX San Antonio
Hewlett-Packard Co
205 Billy Mitchell Rd
512-434-8241

UT Salt Lake City
Hewlett-Packard Co
2160 South 3270 W St
801-972-4711

VA Norfolk
Hewlett-Packard Co
Airport Exec Center
804-461-4025/6

VA Richmond
Hewlett-Packard Co
2914 Hungary Springs Rd
804-285-3431

WA Bellevue
Hewlett-Packard Co
1203 114th Av SE
206-454-3971

WI Brookfield
Hewlett-Packard Co
150 S Sunnyslope Rd
414-784-8800

ALBERTA, CANADA
Edmonton
Hewlett-Packard (Canada) Ltd
11620A 168 St
403-452-3670

ALBERTA, CANADA
Calgary
Hewlett-Packard (Canada) Ltd
210.7220 Fisher St SE
403-253-2713

BRITISH COLUMBIA, CANADA
Richmond
Hewlett-Packard (Canada) Ltd
10691 Shellbridge Way
604-254-0531

MANITOBA, CANADA
Winnipeg
Hewlett-Packard (Canada) Ltd
513 Century St
204-786-7581

PRINCE EDWARD ISLAND, CANADA
Dartmouth
Hewlett-Packard (Canada) Ltd
900 Windmill Rd
902-469-7820

ONTARIO, CANADA
Ottawa
Hewlett-Packard (Canada) Ltd
1020 Morrison Dr
613-820-6483

ONTARIO, CANADA
Mississauga
Hewlett-Packard (Canada) Ltd
6877 Goreway Dr
416-678-9430

QUEBEC, CANADA
Kirkland
Hewlett-Packard (Canada) Ltd
17500 S Service Rd Trans-Canada Highway
514-697-4232

AUSTRIA
Vienna
Hewlett-Packard Ges mbH
Wehlistrasse 29
0222-351621

BELGIUM
Brussels
Hewlettt-Packard Benelux
Blvd de la Woluwe 100 Woluwedal
02-672-22-40

DENMARK
Birkerod
Hewlett-Packard A/S
DK-3460
02-81-66-40

DENMARK
Silkeborg
Hewlett-Packard A/S
DK-8600
06-82-71-66

ENGLAND
Winnersh, Wokingham
Hewlett-Packard Ltd
King Street La
0734-78-47-74

ENGLAND
Altrincham
Hewlett-Packard Ltd
Navagation Road
061-928-6422

ENGLAND
Redhill Surrey
Hewlett-Packard Ltd
106-118 Station Rd
01-684-0103/8

ENGLAND
Castleford, W Yorkshire
Hewlett-Packard Ltd
14, Wesley St
09775-50402

FINLAND
Espoo 10
Hewlett-Packard OY
Revontulentie 7 02100
90-6923031

FRANCE
Orsay
Hewlett-Packard France
Quartier de Courtaboeuf
1-907-78-25

FRANCE
Ecully
Hewlett-Packard France
Boite Postale No 162
78-33-81-25

FRANCE
Toulouse-Le Mirail
Hewlett-Packard France
20 Chemin de la Cepidre
61-40-11-12

FRANCE
Marignane
Hewlett-Packard France
91-89-12-36

FRANCE
Strasbourg
Hewlett-Packard France
Boite Postale 56
88-35-20/21

FRANCE
F-59650 Villeneuve D'Ascq
Hewlett-Packard France
Bureau De Vente De Lille
Immeuble Pericentre Rue Van Gogh
20-51-44-14

FRANCE
Le Blanc Mesnil Cedex
Hewlett-Packard France
Rue de La Commune de Paris
01-931-88-50

GERMANY, WEST
Hannover-Kleefeld
Hewlett-Packard GmbH
Am Grossmarkt 6
0511-46-60-01

GERMANY, WEST
Frankfurt
Hewlett-Packard GmbH
Bernerstrasse 117
0611-50-04-1

GERMANY, WEST
Boblingen, Wurttemburg
Hewlett-Packard GmbH
Herrenbergerstrasse 110
07031-667-1

GERMANY, WEST
Dusseldorf
Hewlett-Packard GmbH
Emanuel-Leutze-Str. 1

GERMANY, WEST
Hamburg
Hewlett-Packard GmbH
Kapstadtring 5
040-24-13-93

GERMANY, WEST
Nurenberg
Hewlett-Packard GmbH
Neumeyer Str 90
0911-56-30-83/85

GERMANY, WEST
0-8021 Taufkirchen
Hewlett-Packard GmbH
Technisches Buero Munich, Eschenstrasse 5
089-601-30-61/7

GERMANY, WEST
Berlin
Hewlett-Packard GmbH
Keith Strasse 2-4
030-24-90-86

ITALY
Milano
Hewlett-Packard Italiana SpA
Via G Di Vittorio 9, 20063 Cernusco Sul Naviglio
2-6251 (10 lines)

ITALY
Roma
Hewlett-Packard Italiana SpA
Viale C Pavese 340
06-54-69-61

ITALY
Napoli
Hewlett-Packard Italiana SpA
Via Nuova san Rocco A Capodimonte 62/A
081-33-71-11

ITALY
Padova
Hewlett-Packard Italiana SpA
Via Turazza 14
49-66-48-88

ITALY
Torino
Hewlett-Packard Italiana SpA
Corso Giovanni Lanza 94
011-682245

NETHERLANDS
Amstelveen
Hewlett-Packard Benelux NV
Van Heuven Goethartlaan 121
020-47-20-21

NORWAY
N-1345 Oesteraas
Hewlett-Packard Norge A/S
Box 34, Oesterndalen 18
02-53-83-60

SAUDI ARABIA
Jeddah
Hewlett-Packard Co
Box 1228, Baghdadiah Street
31173-332201

SPAIN
Madrid
Hewlett-Packard Espanola, SA
Jerez, Calle 3
1-458-26-00

SPAIN
Barcelona
Hewlett-Packard Espanola, SA
Milanesado 21-23
3-203-6200

SWEDEN
Bromma
Hewlett-Packard Sverige AB
Enighetsvagen 3
08-730-05-50

SWEDEN
Orebro
Hewlett-Packard Sverige AB
Vastra Vintergatan 9
019-14-07-20

SWITZERLAND
Schlieren-Zurich
Hewlett-Packard (Schweiz) AG
Zurcherstrasse 20
01-730-52-40

SWITZERLAND
Le Lignon-Geneva
Hewlett-Packard (schweiz) AG
Chateau Bloc 19
022-96-03-22

HEWLETT-PACKARD
COLORADO TELECOMMUNICATIONS DIV.
Box 7050
Colorado Springs, CO 80933
303-593-8700
■ Products & Services
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers

HEWLETT-PACKARD
DESKTOP COMPUTER DIV.
3404 E Harmony Rd
Ft. Collins, CO 80525
303-226-3800
Contact: Inquiries Manager
■ Products & Services
DDP systems
Add-on main memory
Applications packages
DDP systems software
Computer/communications interfaces
Data communications consultants
Lease and resale organizations
Maintenance organizations

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

HICO HORIZONS INTL CO
716 Willow Rd
Menlo Park, CA 94025
415-328-1111
Contact: Charles R Long
■ Products & Services
Cartridge drives
Cassette drives
Tape drives, magnetic
Branch Sales Offices:
CA Menlo Park
Long & Assoc
716 Willow Rd
415-328-1111
CA Buena Park
Rock Associates
8494 Poppy Way
714-521-6980
CT Winsted
Motoreps
100 Whiting St
203-379-8501
GA Atlanta
MacKay Smith Associates
4126 Pleasantdale Rd
404-449-7444
MA Needham
Motoreps
10 Kearney Rd
617-449-3252
NJ Red Bank
Motoreps
157 Broad St
201-741-3356
NY Buffalo
H C Johnson Agencies
8 Los Robles St
716-632-7880
NY Rochester
H C Johnson Agencies
875 Atlantic Ave
716-482-3000
NY Albany
H C Johnson Agencies
105 Wolf Rd
518-459-1239
NC Charlotte
MacKay Smith Associates
501 Archdale
707-527-0240
OH Dayton
Electrical Systems Co
270 Regency Ridge
513-434-9822
OH Springfield
Electrical Systems Co
Box 336
513-399-8022
PA Glenshaw
H C Johnson Agencies Inc
226 South Magnolia Dr
412-961-0414

HITACHI AMERICA LTD
2696 Peachtree Sq
Doraville, GA 30360
404-458-6921
Contact: J Hendrix
■ Products & Services
Branch exchanges—computerized (CBX)
Message switchers
Packet processors
Audio response units

HLB SECURITY ELECTRONICS LTD
211 E 43rd St
NY, NY 10017
212/986-1367
Contact: Leonard Berg
■ Products & Services
Data security devices: encoder/decoders
Data security devices: personal identification systems
Data security devices: software security modules

HMW ENTERPRISES INC
604 Salem Rd
Etters, PA 17319
717-938-4691
Contact: J Adair
■ Products & Services
EIA cable testers
Graphic display terminals
Interactive terminals
Portable data entry terminals
Video data terminals (KSR)
Ribbons and supplies for terminals and printers
Branch Sales Offices:
MA Waltham
Digital Sales Associates
9 Spring St
617-899-4300
PA York
McClain Associates
20 W Market St
717-846-6827

HONEYWELL INFORMATION SYSTEMS
200 Smith St
Waltham, MA 02154
617-895-6000
Contact: Michael Keliher
■ Products & Services
Concentrators
Front-end processors
Message switchers
Modem sharing units
Remote network processors
DDP systems
Minicomputers
Cartridge drives
Disk drives, floppy
Disk drives, large
Tape, magnetic
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Terminal controllers
Video data terminals (KSR)
Maintenance organizations
Timesharing/service bureaus

HOUSTON INSTRUMENT
One Houston Square
Austin, TX 78753
512-837-2820
Contact: Rod Schaffner
■ Products & Services
Digital plotters

HYCOM INC
16841 Armstrong Ave.
Irvine, CA 92714
714-557-5252
Contact: R B Trembly
■ Products & Services
Modems, voice-grade, high-speed (4,800-9,600 b/s)

HYDRIL CO
CONTROL SYSTEMS DIV
9303 Roark Rd
Houston, TX 77099
713-777-5361
Contact: H A Becker
■ Products & Services
Front-end processors
Multiplexers, statistical (intelligent)
Remote network processors
Modems, voice-grade, low-speed (0-1,200 b/s)
Minicomputers
Terminal controllers
Terminal interfaces
Applications packages
Custom programs
Operating systems
Computer/communications interfaces

IBM
DATA PROCESSING DIV
1133 Westchester Ave
White Plains, NY 10604
914-696-1900
Contact: Local Branch Office
■ Products & Services
Concentrators
Front-end processors
Message switchers
DDP systems
Minicomputers
Mainframe computers
Message Systems (Voice)
Add-on main memory
Add-on auxilliary memory
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Video data terminals (KSR)
Applications packages
Custom programs
DDP systems software
Operating systems
Word processing packages
Computer/communications interfaces
Data security devices: software security modules

IBM GENERAL SYSTEMS DIV
223 Perimeter Center Pkwy
Atlanta, GA 30346
Contact: Martin Steiner

ICOT CORP
830 Maude Ave
Mountain View, CA 94043
415-964-4635
Contact: Phil Mustain
■ Products & Services
Front-end processors
Terminal controllers
Branch Sales Offices:
CA Long Beach
ICOT Corp
4401 Atlantic Ave
213-428-6264
GA Atlanta
ICOT Corp
1925 Century Blvd
404-325-1031
IL Chicago
ICOT Corp
150 N Wacker Dr
312-236-6986

NY New York
ICOT Corp
3 Park Ave
212-725-1350

TX Kingswood
ICOT Corp
2119 Shady Branch
713-368-0871

IDACOM ELECTRONICS LTD
4332 97 St
Edmonton, AB T6E 5V8
Canada
403-438-2468
Contact: Lloyd McGregor
■ Products & Services
Data content monitors
Error rate detectors
Protocol analyzers
Applications packages
Branch Sales Offices:

MD Washington Grove
Wiltronix Inc
16850 Oakmont Ave
301-258-7676

NJ Livingston
W & G Instruments Inc
119 Naylon Ave
201-994-0854

IDE CORP
4554 Emery Industrial Parkway
Cleveland, OH 44128
216-831-7280
Contact: K Lowry
■ Products & Services
Multiplexers, statistical (intelligent)
Modem eliminators
EIA cable testers
Graphic display terminals
Remote line printers
Cables, electrical prefabricated extending
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Switches, data communications: manual
Used equipment

IDENTIFICATION SYSTEMS INC
4 High St
Acton, MA 01720
617-263-2111
Contact: Ronald A Wilfert
■ Products & Services
Badge readers
Data security devices: personal identification systems

ID SYSTEMS CORP
4093 Leap Rd
Hilliard, OH 43026
614-876-1595
Contact: Joe Marsalka
■ Products & Services
Microcomputer/ microprocessor systems
Digital plotters
Graphic display terminals
Video data terminals (KSR)
Branch Sales Offices:

AL Huntsville
Gentry Associates, Inc
2109 W Clinton Ave
205-534-9771

CA Anaheim
Moxon Electronics
1940 S Santa Cruz St
205-534-7600

CO Denver
PAR Associates
10515 E 40th
303-371-4140

FL Orlando
Gentry Associates, Inc
7527 Currency Dr
305-859-7450

GA Roswell
Gentry Associates, Inc
9800 Grimes Bridge Rd
404-998-2828

IL Arlington Hts
Dytec/Central, Inc
315 W University Dr
312-394-3380

IN Indianapolis
Dytec/Central, Inc
25 Beachway Dr
317-247-1316

KS Lenixa
Dytec/South, Inc
8245 Nieman
913-888-0215

LA Gretna
Gentry Associates, Inc
1799 Stumpf Blvd
504-367-3975

MD Annapolis
Spectro Associates
784F Fairview Ave
301-261-1984

MD Rockville
Spectro Associates
11445 Beechgrove Ln
301-279-2010

MA Waltham
Media Systems,Inc
244 Second Ave
617-890-6934

MI Ann Arbor
W C Koepf Associates
2321 Lancashire
313-459-9150

MN St Paul
Dytec/North, Inc
1821 University Ave
612-645-5816

MO Maryland Hts
Dytec/South, Inc
11657 Adie Rd
314-569-2990

NJ Fort Lee
Technical Marketing Associates
2460 Lemoine Ave
201-224-6911

NM Albuquerque
CPS
2705 Pan American NE
505-345-8756

NY Rochester
J Cameron Associates, Inc
29 Goodway Dr
716-473-4590

NC Burlington
Gentry Associates, Inc
1336 S Church St
919-227-3639

OH Chagrin Falls
W C Koepf Associates
68 Olive St
216-247-5129

OR Portland
PNE
2035 SW 58th
503-297-8056

PA Hatboro
QED Electronics, Inc
300 N York Rd
215-674-9600

SC Greenville
Gentry Associates, Inc
Green Gate Park
803-271-8543

UT Centerville
PAR Associates
1199 S Main St
801-292-8145

WA Bellevue
PNE
2020 116th NE
206-454-0150

IESI INC
408 NE 72 St
Seattle, WA 98115
206-526-6800
Contact: Joe Winston
■ Products & Services
Batch terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Teleprinters, non-impact
Branch Sales Offices:

MA Needham
Synertron
10 Kearney Rd
617-449-2111

OR Portland
Centauri Corp
516 SE Morrison
503-238-1320

TX Richardson
Corporation for Distributed Systems
300 Bishop
214-234-1230

PUERTO RICO
Rio Piedras
Management Data Inc
La Electronica Bldg
746-5592

ONTARIO, CANADA
Toronto
TA Rock & Assoc
110 Erskine Ave
416-483-2904

AUSTRALIA
Chatswood
Saztec (Equipment) Pty Ltd
815 Pacific Hwy
411-5377

ENGLAND
London
Computer Service Centre Ltd
Brunel Rd
749-1481

ILLINOIS BELL TELEPHONE CO.
225 W. Randolph St.
Chicago, IL 60606
312-727-7648
Contact: William R Ziegle
■ Products & Services
Telephone companies
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
Digital service units
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Disk drives, floppy
Disks, floppy
Data entry terminals
Remote line printers
Teleprinters

Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Automatic answering units
Automatic calling units
Data communications consultants
Network simulation services

IMAGE SYSTEMS INC
11244 Playa Ct
Culver City, CA 90230
213-390-3378
Contact: B J Rogers
■ Products & Services
Microfilm equipment, systems and services
Branch Sales Offices:
CA Culver City
Image Systems Inc
11244 Playa Ct
213-390-3378
NY New York
Image Systems Inc
225 Park Ave S
212-677-1510

IMLAC CORP
150 A St
Needham, MA 02194
617-449-4600
Contact: Clarence A Tilger
■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
CA Irvine
Imlac
2102 Business Center Dr
714-833-2370
FL Melbourne
Imlac
1902 Highway A1A
305-777-3000
MA Needham
Imlac
150 A St
617-449-4600
TX Sherman
Imlac
320 North Travis St
214-868-2003
VA Alexandria
Imlac
703-671-6823
ENGLAND
Amersham, Bucks
Imlac Int Ltd
17 Chesham Rd
02403-22167

IMS
2 Frederick Street
Framingham, MA 01701
Contact: Terry D Pardoe
■ Products & Services
Data communications consultants
Educational services

INDIANA BELL TELEPHONE CO.
240 N. Meridian St.
Indianapolis, IN 46204
1-800-562-2444
Contact: Janet Miller
■ Products & Services
Telephone companies
Branch exchanges—private (PBX, PABX, etc.)
Line sharing units
Channel service units
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Disk drives, floppy
Data entry terminals
Teleprinters
Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Automatic answering units
Automatic calling units
Switches, data communications: manual

INDUSTRIAL COMPUTER CONTROLS INC
196 Broadway
Cambridge, MA 02139
617-864-0283
Contact: Elaine M M Bell
■ Products & Services
Message switchers
Computer/communications interfaces
Protocol converters
Satellite delay compensation units
Branch Sales Offices:
CA Los Alamitos
CSS Telecommunications Specialists
10915 Bloomfield Ave
213-594-4574
CA Mountain View
CSS Telecommunications Specialists
2680 Bayshore Frontage Rd
415-964-4335
WA Seattle
CSS Telecommunications Specialists
8609 Roosevelt Way NE
206-527-4750

INDUSTRIAL DATA TERMINALS CORP
173 Heatherdown Dr
Westerville, OH 43081
614-882-3282
Contact: W C Hays
■ Products & Services
Graphic display terminals
Branch Sales Offices:
AL Huntsville
Pen-Tech Assoc Inc
3322 Memorial Pkwy SW
205-881-9298
AZ Scottsdale
Dave Menegay Assoc
Box 966
602-994-9519
CA San Jose
Datarep Inc
97 Boston Ave
408-279-1212
FL Deerfield Beach
Pen-Tech Assoc Inc
201 SE 15th Terrace
305-421-4989
FL Casselberry
Pen-Tech Assoc Inc
1398 Semoran Blvd
305-645-3444
GA Marietta
Pen-Tech Assoc Inc
627 Cherokee Street
404-424-1931
IL Parkridge
AD-Tech
701 S Lincoln Ave
312-692-7320
MA Waltham
CSI Systems
60 Hickory
617-890-0127
MI Ann Arbor
W C Koepf
2321 Lanacashire
313-459-9150
NJ Ridgewood
Hansen & Hughes
PO Box 806
201-652-7055
NM Albuquerque
Data Handling Co Inc
3105 San Pedro NE
505-884-0284
NC High Point
Pen-Tech Assoc Inc
1202 Eastchester Dr
919-883-9125
OH Chagrin Falls
W C Koepf
68 Olive St
216-247-5129
OH Dayton
W C Koepf
53 Park Ave
513-293-6062
OH Columbus
W C Koepf
1089 Barberry Ln
614-866-8117
OR Portland
Tasco Inc
7764 SW Alden
503-245-8168
PA Bryn Mawr
Hopkins Associates
26 Summit Grove
215-527-1127
PA Pittsburgh
W C Koepf
919 Tropical Ave
412-344-3653
TX Dallas
SCI Sales Inc
16990 Dallas Pkwy
214-931-1487
TX Houston
SCI Sales Inc
1199 Nasa Rd
713-488-3728
VA McLean
Mega/Mark Ltd
7927 Jones Branch Rd
703-356-6200
WA Bellevue
Tasco Inc
606 110th Ave NE
206-453-1414

INDUSTRY AUTOMATION DIV WESTINGHOUSE
1200 W. Colonial Dr.
Orlando, FL 32804
305-843-7030
Contact: Carl Anderson
■ Products & Services
Custom programs
Data communications consultants

INFOLINK CORP
1925 Holste Rd
North Brook, IL 60062
312-291-2917
Contact: Claude J Clouthier

■ Products & Services
Concentrators
Front-end processors
Multiplexers, time division
Remote network processors
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
DDP systems
Minicomputers
Tape, magnetic
Tape drives, magnetic
Audio response units
Video data terminals (KSR)
Automatic answering units
Data access arrangement devices
Maintenance organizations
Branch Sales Offices:
CA San Diego
Infolink Data Communications
7655 Convoy Ct
714-569-1752
GA Atlanta
Infolink Data Communications
5600 Rosewell Rd NW
404-252-2316
IL Lake Bluff
Infolink Data Communications
Box 440
312-295-6699
NJ Englishtown
Infolink Data Communications
23 Arbach Ln
201-536-5990
NY Larkspur
Infolink Data Communications
700 Larkspur Landing Cir
415-461-2673
TX Dallas
Infolink Data Communications
Box 400636
214-386-6380

INFOREX INC
186 Middlesex Turnpike
Burlington, MA 01803
617-272-6470
Contact: Dave McCrabb
■ Products & Services
DDP systems
Local networks
Branch Sales Offices:
CA Los Angeles
Inforex Inc
1149 S Broadway
213-744-0325
CA Burlingame
Inforex Inc
1633 Old Bayshore Highway
415-697-1000
CO Denver
Inforex Inc
2480 W 26th Ave
303-433-6242
FL Miami
Inforex Inc
1525 Northwest 167th St
305-621-7586
FL Jacksonville
Inforex Inc
101 Century 21 Dr
904-724-8435
GA Atlanta
Inforex Inc
1800 Center Blvd
404-329-0102
IL Rolling Meadows
Inforex Inc
Northwest Executive Ctr;5105 Tollview Dr
312-577-8990
IN Indianapolis
Inforex Inc
2441 Production Dr
317-244-9576
KS Kansas City
Inforex Inc
4th and States Streets
913-321-8887
MA Burlington
Inforex Inc
186 Middlesex Tpk
617-273-1960
MI Southfield
Inforex Inc
24901 Northwestern Hgwy
303-353-1580
MN Minneapolis
Inforex Inc
Southgate Office Plaza;5001 W 80th St
612-835-6550
MO St Louis
Inforex Inc
1177 Warson Rd
314-993-3003
NJ Woodbridge
Inforex Inc
Plaza 9
201-636-2448
NJ Woodbridge
Inforex Inc
900 Route 9
201-636-2030
NY New York
Inforex Inc
One Penn Plaza;250 W 34th St
212-594-7830
NY Rochester
Inforex Inc
120 Allens Creek Rd
716-442-7030
NC Greensboro
Inforex Inc
Friendship Center Office Park
919-292-9225
OH Cincinnati
Inforex Inc
4055 Executive Park Dr
513-563-4111
OH Independence
Inforex Inc
4600 Rockside Rd
216-524-9030
PA Malvern
Inforex Inc
Great Valley Corporate Ctr;4 Country View Rd.
215-647-4301
PA Pittsburgh
Inforex Inc
Manor Oak Two Bldg
412-343-0700
TX Dallas
Inforex Inc
4360 Spring Valley Rd
214-386-4895
TX Houston
Inforex Inc
4151 Southwest Frwy
713-621-7411
VA Rosslyn
Inforex Inc
1901 North Moore St
703-522-8200
WA Seattle
Inforex Inc
2722 Eastlake Ave
206-322-6760

INFORMATICS INC
21031 Ventura Blvd
Woodland Hills, CA 91364
213-887-9040
Contact: Carol J Hays
■ Products & Services
DDP systems
Applications packages
Custom programs
DDP systems software
Data communications consultants
Educational services
Timesharing/service bureaus
Branch Sales Offices:
CA Canoga Park
Informatics Inc
21050 Vanowen St
213-887-9121
CA Palo Alto
Informatics Inc
1121 San Antonio Rd
415-964-9900
MD Rockville
Informatics Inc
6011 Executive Blvd
301-770-3000
NY New York
Informatics Inc
555 Madison Ave
212-935-6500
OH Columbus
Informatics Inc
1651 NW Prof Plaza
614-457-7250

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

ONTARIO, CANADA
Willowdale
Mark IV Informatics Canada Ltd
2 Lansing Square
416-493-9716
BRAZIL
Sao Paulo
Informatics Do Brasil
Av Brig Faria Lima 1541
813-4141
DENMARK
Copenhagen
Informatics P&W Aps
Zinnsgade 7
01-26-27-28
ENGLAND
London
Timesharing/service bureaus
64-78 Kingsway
01-831-6715
FRANCE
Paris
Informatics (France) SA
41 Rue Ybry
758 12 40
GERMANY, WEST
Dusseldorf 11
Informatics GmBH
Monschauer Str 1, 4000
211 507041
HONG KONG
Hong Kong
Informatics Inc
1402 Wah Cheong Bldg, 1 Glenealay
5-250541
JAPAN
Tokyo
Informatics Japan Ltd
2-3-1 Hitotsubashi 2-Chome
03-263-7241

SWITZERLAND
Geneva
Informatics SA
267 route de Meyrin
41-022-82-51-51

INFORMATION CONCEPTS
Box 18658
Dallas, TX 75218
214-324-2635
Contact: Gary W Goodwin
■ Products & Services
Custom programs
Access program
Teleprocessing monitors

INFORMATION CONTROL CORP
9610 Bellanca Ave
LA, CA 90045
213-641-8520
Contact: Carol J Smith
■ Products & Services
Data entry terminals
Branch Sales Offices:
CA Glendale
Mission Marketing Group
1366 E Harvard St
213-247-9110
CA Burlingame
Polach & Bensinger Inc
1838 El Camino Real
415-697-2525
MD Silver Spring
Marktron Inc
13975 Connecticut Ave
301-460-6100
MA Burlington
Tritek
155 Middlesex Turnpike
617-272-4550
MN New Brighton
TWC Sales
763 Torchwood Dr
612-636-1770
NJ River Vale
Buddtronics
31 Holiday Ct
201-666-5030
OH Columbus
Geotronix Inc
Box 20312
614-457-8472
PA King of Prussia
Rivco January Inc
Box 338
215-265-5211
TX Dallas
MGR Electronics Inc
11325 Pegasus
214-349-9940

INFORMATION GATEKEEPERS INC
167 Corey Rd, Suite 212
Brookline, MA 02146
617-739-2022
Contact: Michael A O'Bryant
■ Products & Services
Data communications consultants
Educational services
Branch Sales Offices:
MA Williamstown
Robert J Grande Associates
Box 425
413-458-9313
FRANCE
Paris
Hawley Russell Associates
30-32 Rue Cortambert
504-3338

INFORMATION TECHNOLOGY INC
56 Kerney Road
Needham, MA 02194
617-444-5702
Contact: L F D'Innocenzo
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Microcomputer/ microprocessor systems
Database processors
Data entry terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Video data terminals (KSR)
Word processors, communicating
Applications packages
Personal computer communications software
Word processing packages
Microfilm equipment, systems and services
Used equipment
Branch Sales Offices:
CA Long Beach
Information Technology Inc
1653 E 28 St
213-595-1257
NY New York
Information Technology Inc
One World Trade Ctr
212-631-0205

INFOTRON SYSTEMS CORPORATION
Cherry Hill Ind Center
Cherry Hill, NJ 08003
609-424-9400
Advertising page 44
Contact: Jeff Kraengel
■ Products & Services
Branch exchanges—computerized (CBX)
Concentrators
Multiplexers, time division
Multiplexers, statistical (intelligent)
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Data content monitors
Electrical-parameters test equipment
Branch Sales Offices:
NJ Cherry Hill
Infotron Systems Corp
Cherry Hill Industrial Ctr
800-257-8352
ENGLAND
Dorchester
Infotron Systems Ltd
Systems House
0305-66016

INMAC
2465 Augustine Dr
Santa Clara, CA 95051
408-727-1970
Contact: Lee Fissette
■ Products & Services
Port sharing units
Acoustic couplers
Data content monitors
EIA cable testers
Cassettes
Disks, floppy
Disk packs
Tape, magnetic
Tape, paper
Tape punch/reader, paper
Custom programs
Personal computer communications software
Cables, electrical prefabricated extending
Computer/communications interfaces
Data jacks and plugs
Data security devices: software security modules
Fire detection/protection equipment
Furniture, cabinets, terminal enclosures
Microfilm equipment, systems and services
Paper for terminals
Power Distribution-Regulation
Ribbons and supplies for terminals and printers
Selection & transfer equipment: monitor & test switching equipment
Switches, data communications: manual
Uninterruptible power supplies, line correctors, etc
Data communications consultants
Branch Sales Offices:
CA Sunnyvale
Inmac
130 S Wolfe Rd
408-737-8700
MA Schaumberg
Inmac
880-890 Remington Rd
312-885-8383
NH Hudson
Inmac
28 Hampshire Dr;Sagamore Ind Park
603-889-4900
NJ Norwood
Inmac
70 Oak St
201-767-3601
TX Grand Prairie
Inmac
2005 108th St
214-641-0024

INNOVATIVE DATA TECHNOLOGY
4060 Morena Blvd
San Diego, CA 92117
714-270-3990
Contact: Gary E Pyles
■ Products & Services
Cartridge drives
Tape drives, magnetic
Branch Sales Offices:
AL Huntsville
Scientific Devices Southeast Inc
904 Bob Wallace Ave
205-536-1969
AZ Scottsdale
Barnhill Associates Inc
7319 E Stetson Dr
602-947-7841
CA Garden Grove
Advanced Digital Group Inc
12062 Valley View St
714-897-0319
CA Beverly Hills
C V S
139 S Beverly Dr
213-859-0651
CA San Diego
Mesa Engineering & Sales Assoc
7525 Convoy Ct
714-278-8021
CA Los Altos
Bergis Associates
4966 El Camino Real
415-967-4441

CO Englewood
Barnhill Associates Inc
7076 S Alton Way
303-779-3600

FL Orlando
Scientific Devices Southeast Inc
806 Twenty-Sixth St
305-841-8180

FL Shalimar
Scientific Devices Southeast Inc
47 Meigs Dr
904-651-4407

IL Downers Grove
Physics Equipment Inc
4630 S Oakwood
312-960-4053

IN Carmel
Carter McCormic & Peirce
1717 E 116th St
317-844-4175

KS Shawnee
Atech
11201 W 58th Terrace
913-268-9644

MI Farmington Hills
Carter McCormic & Peirce
23995 Freeway Park Dr
313-477-7700

MN Elkriver
Prairie Associates
Box 33
612-441-6190

MO St Louis
Atech
10270 Page Ave
314-428-7447

NM Albuquerque
Barnhill Associates Inc
1410-D Wyoming NE
505-299-7658

NC Winston-Salem
Scientific Devices Southeast Inc
Box 11136
919-765-5776

OH Cleveland
Carter McCormic & Peirce
22650 Lorain Rd
216-779-5100

OH Englewood
Carter McCormic & Peirce
15 Rockridge Rd
513-836-0951

OR Tigard
Electronic Sources Inc
10580 SW McDonald;Suite 202
503-684-0040

PA Pittsburgh
Carter McCormic & Peirce
409 Beatty Rd
412-372-4415

TX Austin
Barnhill Associates Inc
111 W Anderson Lane
512-451-0217

TX Houston
Barnhill Associates Inc
10606 Hempstead Hwy
713-688-9971

TX Richardson
Barnhill Associates Inc
1101 Executive Dr E
214-231-2573

UT Murray
Barnhill Associates Inc
5180 South 300 West
810-262-3000

VA McLean
Scientifice Devices Inc
6514 West Langley Ln
703-893-6513

VA Great Falls
Innovative Data Technology
Box 363
703-759-3003

WA Bellevue
Electronic Sources Inc
1406-140th Place NE
206-643-0400

WI Waukesha
Prairie Associates
2913 Devonshire Ct
414-544-1141

ALBERTA, CANADA
Calgary
Associated Test Equipment Ltd
4216-12th Street NE
403-230-1697

BRITISH COLUMBIA, CANADA
Vancouver
Associated Test Equipment Ltd
303-1037 West Broadway
604-734-2012

ONTARIO, CANADA
Scarborough
Associated Test Equipment Ltd
3400 Pharmacy Ave
416-497-2208

ONTARIO, CANADA
Ottawa
Associated Test Equipment Ltd
1704 Carling Ave
613-728-3717

QUEBEC, CANADA
Montreal
Associated Test Equipment Ltd
2545 Cavendish Blvd
514-481-7733

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

INNOVATIVE ELECTRONICS INC
15200 NW 60th Ave
Miami Lakes, FL 33014
305-558-1591
Advertising page 158
Contact: Ron Stein
■ Products & Services
Concentrators
Front-end processors
Line sharing units
Modem sharing units
Port selectors
Port sharing units
Remote network processors
RTS emulator
Data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teletypewriters
Terminal controllers
Terminal interfaces
Code converters
Computer/communications interfaces
Data compression devices
Error controllers
Protocol converters

INSAC SOFTWARE INC
2300 Peachtree Rd
Atlanta, GA 30338
404-452-7676
Contact: Craig Wilson
■ Products & Services
Applications packages
Custom programs
DDP systems software
Teleprocessing monitors
Educational services

INTECOM INC
16509 Addison Rd
Dallas, TX 75240
214-233-0566
Contact: Parker Ladd
■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—programmable (IBX, EPBX, etc.)
Network management centers
Protocol converters

Branch Sales Offices:

CA Los Angeles
InteCom Inc
9550 Warner Ave
714-963-8080

IL Chicago
InteCom Inc
200 West Monroe
312-346-6874

NY New York
InteCom Inc
575 Madison Ave
212-838-2762

TX Dallas
InteCom Inc
16509 Addison Rd
214-233-0566

INTEGRAL DATA SYSTEMS INC
Rt 13 South
Milford, NH 03055
617-237-7610
Contact: Sales Coordinators

Branch Sales Offices:

AL Huntsville
Gentry Assoc Inc
2109 W Clinton Ave
205-534-9771

AZ Scottsdale
BFA Corp
4426 N Saddlebag Trail
602-994-5400

CA Redonda Bch
Group III ELectronic
2615 Manhattan Beach
213-973-7844

CA San Diego
Group III ELectronic
7263 Engineer Rd
714-292-0525

CA Sunnyvale
Group III ELectronic
542 Lakeside Dr
408-245-4392

CA Irvine
Group III Electric
2691 Richter Ave
714-546-6390

CA Irvine
Group III
2691 Richter Ave
714-546-6390

CO Denver
BFA Corp
1221 S Clarkson
303-777-8070

CO Colorado Springs
BFA Corp
735 Garden of Gods
301-594-0880

CT Hamden
Datcom Inc
1 Evergreen Ave
203-288-7005

FL Orlando
Gentry Assoc Inc
7527 Currency Dr
305-859-7450

FL Ft Lauderdale
Gentry Assoc
6289 W Sunrise Blvd
305-791-8405

GA Roswell
Gentry Assoc Inc
9800 Grimes Bridge Rd
404-998-2828

IL Arlington Hts
Dytec/Central
315 W University Dr
312-394-3380

IN Indianapolis
Dytec/Central
25 Beachway Dr
317-247-1316

IA Iowa City
Dytec/Iowa
Box 2148
319-683-2282

KS Leneya
Dytec/South
8245 Nieman Rd
913-888-0215

LA Gretna
Gentry Assoc Inc
1799 Stumpf Blvd
504-367-3975

MD Gaitharsburg
MESA Inc
16021 Industrial Dr
301-948-4350

MA Waltham
Datcom Inc
27 Spruce St
617-899-6111

MI Madison Hts
WKM Assoc Inc
345 Girard
313-588-2300

MN St Paul
Dytec/North
1821 University Ave
612-645-5816

MO Hazelwood
Dytec/South
11657 Adie Rd
314-569-2990

NM Albuquerque
BFA Corp
1704 Moon NE
505-292-1212

NM Las Cruces
BFA Corp
Hadley & Motor Blvd
505-524-9693

NY Elmont
Crane & Egert Corp
146 Meacham Ave
516-488-2100

NY
Ossman Inst
666 Old Collamer
315-437-6666

NY
Ossman Inst
300 Main St
607-785-9946

NY
Ossman Inst
130 Allen Creek
716-473-5720

NC Burlington
Gentry Assoc Inc
428 Alamance Rd
919-227-3639

NC Burlington
Centry Assoc
1336 S Church St
919-227-3639

OH Dayton
WKM Assoc Inc
7913 S Suburban Rd
513-434-7500

OH Cleveland
WKM Assoc Inc
16141 Puritas Ave
216-267-0445

OR Portland
Pacific Northwest Electronic
2035 SW 58
503-297-8056

PA Pittsburgh
WKM Assoc Inc
90 Clairton Blvd
412-892-2953

PA
Lotz & Assoc
500 Main St
215-256-6588

SC Greenville
Gentry Assoc
Green Gate Pk
803-271-8543

TN
Centry Assoc
2124 Russelwood
615-977-0282

TX El Paso
BFA Corp
4120 Rio Bravo
914-542-1762

UT Salt Lake City
BFA Corp
140 W 2100 S
801-466-6522

WA Bellevue
Pacific Northwest Electronic
2020-116th NE
206-454-0150

INTELLIGENT SYSTEMS CORP
225 Technology Park/Atlanta
Norcross, GA 30092
404-449-5961
Contact: Dave Deans
■ Products & Services
Disk drives, floppy
Data entry terminals
Graphic display terminals
Programmable terminals
Remote line printers
Video data terminals (KSR)
Word processors, communicating
Applications packages
Emulation packages
Word processing packages
Branch Sales Offices:

AL Huntsville
W A Brown Instruments Inc
7912-C Charlotte Dr
205-883-8660

AZ Scottsdale
BFA Corp
4426 N Saddlebag Trail
602-994-5400

CA Los Angeles
The Thorson Co
520 S Sepulveda
213-476-1241

CA Goleta
The Thorson Co
340 S Kellogg Av
805-964-8751

CA Irvine
The Thorson Co
18009 Sky Park Cir
714-557-4460

CA San Diego
The Thorson Co
7841 Balboa Av
714-292-8525

CA Los Angeles
Computers International
3540 Wilshire Blvd
213-382-1107

CA Los Altos
Jay Stone Assoc
339 S San Antonio Rd
415-948-4563

CA Alhambra
Thorson Co
624A N Garfield Ave
213-281-2280

CO Denver
Par Assoc
10515 E 40th Ave
303-371-4140

CT Goshen
J & J Assoc Inc
Box 2241
203-624-7800

FL Ft Lauderdale
W A Brown Instruments
961 NW 53 St
305-776-4800

FL Melbourne
W A Brown Instruments
701 Lincoln Ave
305-723-0766

FL Orlando
W A Brown Instruments
222 Weber St
305-425-5505

FL Tallahassee
W A Brown Instruments
1325 E Tennessee St
904-878-6642

GA Atlanta
W A Brown Instruments
3781 NE Expwy
404-455-1035

GA Atlanta
American Business Systems
Box 88220
404-394-9603

GA Atlanta
ISC Middle East
Box 48541
404-325-7569

HI Honolulu
Thorson Co
677 Ala Moona Blvd
808-524-8633

IL Northbrook
Resource Data Systems
801 Skokie Blvd
312-564-5440

KY Lexington
Lowry & Assoc Inc
Box 1827
606-273-3771

LA Mandeville
W A Brown Instruments
350 N Causeway Blvd
504-626-9701

MD Springfield
Intron Corp
7830 Baclick Rd
703-569-1502

MA Winchester
J&J Assoc Inc
225 East St
617-729-5770

MA Cambridge
Techexport
139 First St
617-661-9424

MI Brighton
Lowry & Assoc Inc
8163 W Grand River
313-227-7067

MI Grand Rapids
Lowry & Assoc Inc
3902 Costa NE
616-363-9839

MN St Paul
Dytec North Inc
1821 University Ave
612-645-5816

MO Grandview
Digital Systems Sales Inc
4006 E 137th Terrace
816-765-3337

NM Albuquerque
BFA Corp
1704 Moon NE
505-292-1212

NM Las Cruces
BFA Corp
Corner Hadley & Motel Blvd
505-524-9693

NY Ft Lee
Technical Marketing Assoc Inc
2460 Lemoine Ave
201-224-6911

NY N Syracuse
NACO Electronics Corp
Box 276
315-699-2651

NY Fairport
Naco Electronics Corp
17 Port Meadow Trail
716-223-4490

NY Utica
Naco Electronics Corp
2631 Edgewood Rd
315-732-1801

NC Durham
W A Brown Instruments
828 Glendale Ave
919-683-1580

OH Cleveland
Lowry & Assoc Inc
1440 Snow Rd
216-398-9200

OH Dayton
Lowry & Assoc Inc
2194 Hewitt Ave
513-435-7684

OR Beaverton
The Thorson Co
6700 SW 105th Ave
503-644-5900

PA Ambler
Denco Data Equipment Corp
25 Skippack Pk
215-542-9876

PA Pittsburgh
Lowry & Assoc Inc
Seven Parkway Ctr
412-922-5110

SC Columbia
W A Brown Instruments
1234 St Andrews Rd
803-798-8070

TN Oakridge
W A Brown Instruments Inc
733 Emory Valley Rd
615-482-5761

TX Dallas
US Data Eng
14241 Proton Rd
214-661-9633

TX Austin
US Data Engineering
8701 Shaal Creek
512-454-3579

TX Houston
US Data Engineering
4120A Director's Row
713-681-0200

UT Centerville
Par Assoc
1167 N Deerfield Dr
801-292-8145

WA Bellevue
The Thorson Co
One Lake Bellevue Dr
206-455-9180

ONTARIO, CANADA
Ottawa
Datamex
1750 Courtwood Crescent
613-224-1391

ONTARIO, CANADA
Vancouver
Datamex Ltd
525 Seymour St
604-684-8625

ONTARIO, CANADA
Toronto
Datamex Ltd
14 Leswyn Rd
416-787-1208

QUEBEC, CANADA
Dorval
Datamex Ltd
785 Avenue Lajoie
514-636-9774

AUSTRALIA
Mt Waverly, Victoria
Anderson Digital Equipment
1 Expo Court
Melbourne 543-2077

AUSTRALIA
New South Wales 2120
Anderson Digital Equipment P/L
Box 341 Pennant Hills
(02) 848-8533

AUSTRALIA
Chermside QLD 4032
Anderson Digital Equipment P/L
Box 204
(07) 350-2611

ENGLAND
West Howe Bournemouth
Techex Ltd
58 Roundways;Elliot Rd
2016-71181

FRANCE
Rueil
Techdata Sarl
92 Avenue Albert 1er
749-47-65

ITALY
20125 Milano
E F E Srl
Via Villa Mirabello 6
02-600733

JAPAN
Tokyo
Computers International Japan Inc
MKC Shinsen Bldg;20-22 Shinsen-cho
03-463-9921

NEW ZEALAND
Wellington
Anderson Digital Electronics
Box 43-119, Wainuiomata
644-585/646-961

NEW ZEALAND
Christchurch
Anderson Digital Electronics
Box 25-104
796-210

SPAIN
Barcelona
Sistemas de Organizacion Mecanizada SA; C/LOS Vergos 56, Bigs
204-17-43

SWEDEN
Vallingby 4
Teleinstruments AB
Maltesholmsvagan 13
08-380-370

SWITZERLAND
CH-540 Baden-Dattwil
W Stolz AG
Tafernstrasse 15
057-546-55

INTERACTIVE INFORMATION SYSTEMS INC
10 Knollcrest Dr
Cincinnati, OH 45237
513-761-0132
Contact: Kim A Sheridan
■ Products & Services
Applications packages
Custom programs
Operating systems
Data communications consultants
Timesharing/service bureaus

INTERACTIVE SYSTEMS CORP
1212 Seventh St
Santa Monica, CA 90401
213-450-8363
Contact: Dwayne Lowry
■ Products & Services
Local networks
Microcomputer/ microprocessor systems
Interactive terminals
Word processors, communicating
Branch Sales Offices:
DC Washington
Interactive Systems Corp
1015 15th St NW
202-789-1155
TX Dallas
Interactive Systems Corp
4099 McEwen St

INTERDYNE CO
14761 Califa St
Van Nuys, CA 91411
213-787-6800
Contact: Bob Dye
■ Products & Services
Cartridge drives
Cassette drives
Tape drives, magnetic

INTERFACE MECHANISMS INC
4405 Russell Road
Lynnwood, WA 98036
206-743-7036
Contact: Frank M Jones
■ Products & Services
Bar code readers
Remote line printers
Branch Sales Offices:
AL Huntsville
W A Brown Instruments
Box 4560
205-883-8660
AZ Scottsdale
BFA Corp
4426 Saddlebag Trail
910-950-1193

AR Mesa
Data Systems Marketing
2256 W Catalina Ave
602-833-0061

CA Huntington Beach
RSO & Assoc
1110 Olive Ave
714-536-4032

CA Altadena
Data Systems Marketing
3560 N Glenrose
213-794-5257

CA Mt View
Data Systems Marketing
2680 Bayshore Frontage Rd #810
415-941-0240

CA Palo Alto
Ausint
151 University Ave #207
415-326-0564

CO Denver
Data Systems Marketing
955 Bannock St
303-573-5133

CO Colorado Springs
BFA Corp
975 Garden of the Gods Rd #E
303-594-0888

FL Orlando
W A Brown Instruments
Box 513
305-425-5505

FL Ft Lauderdale
W A Brown Instruments
961 NW 53 St
305-776-4800

FL Melbourne
W A Brown Instruments
Box 1406
305-723-0766

FL Ft Walton Beach
W A Brown Instruments
107 A Tupelo Ave
904-243-9029

GA Atlanta
W A Brown Instruments
3781 NE Expwy
404-455-1035

IL Arlington Hghts
Dytec/Central Inc
315 W University Dr
312-394-3380

IN Indianapolis
Dytec/Central Inc
25 Beachway Dr
317-247-1316

KS Overland Park
Ramsey Assoc
6900 80th St
913-649-6996

LA Mandeville
W A Brown Instruments
Box 786
504-626-9701

LA LaFayette
Comspec Inc
403 Mecca Dr
318-232-6275

MD Rockville
EMA Inc
11716 Parklawn Dr
301-881-5300

MA Cochituate
Ray Stevens
34 Fuller Rd
617-653-8655

MI Madison Heights
WKM Associates
345 W Girard
313-588-2300

MN St Paul
Dytec/North Inc
1821 Univ Ave
612-645-5816

MO Maryland Heights
Ramsey Assoc
75 Worthington Dr #104
314-878-5042

NM Albuquerque
BFA Corp
505-294-5790

NC Durham
W A Brown Instruments
828 Glendale Ave
919-682-2383

OH Cleveland
WKM Associates
16141 Puritas Ave
216-267-0445

OH Dayton
WKM Associates
7913 S Suburban Rd
513-434-7500

OK Tulsa
Comspec Inc
3726 S Peoria
918-743-6892

OR Hillsboro
DSM Northwest
910 NW Brookwood
503-640-4883

OR Bend
DSM Northwest
Box 6032
503-388-3612

PA Plymouth Meeting
EMA Inc
649 West Germantown Pike
215-828-7400

PA Pittsburgh
WKM Associates
90 Clairton Blvd
412-892-2953

SC Columbia
W A Brown Instruments
1234 St Andrew Rd #3
803-798-8070

TN Oak Ridge
W A Brown Instruments
733 Emory Valley Rd
615-482-5761

TX Houston
Comspec Inc
Box 79438
713-461-4487

TX Richardson
Comspec Inc
Box 693
214-234-4137

TX San Antonio
Comspec Inc
Box 29000
512-340-6507

UT Salt Lake City
BFA Corp
140 W 2100 So #130
801-466-6522

VA Richmond
EMA Inc
2715 Buford Dr
804-320-8801

WA Bothell
DSM Northwest
10412 Beardslee Blvd
206-487-3571

WA Spokane
DMS Northwest
West 612 2nd St
509-747-6216

QUEBEC, CANADA
Rexdale
Ahearn and Soper Ltd
31 Enterprise Rd
416-245-4848

AUSTRALIA
Clayton
Anderson Digital Equipment
14 White Side Rd
03-544-3444

BELGIUM
Brussels
C N Rood SA
Pl DeJamblinne DeMeux 37
02-735.21.35

DENMARK
Holte
Iversen & Martens A/S
Hanne Nielsens Vej 10
02.42.47.11

ENGLAND
Berkshire
Intermec UK Ltd Studio House
215 Kings Rd Reading RG14LS
0734 662858

GERMANY, WEST
Eching b Munchen
Kortron Elektronik GMBH
Breslauer Str 2
089-31901-288

JAPAN
Minami-Ku
Matsushita Electric
48 Andojibashi-Dori 4-Chome
06-282-5604

KOREA REP (REP)
Seoul
Korea Computer Center
8-61 Galwol-Dong
793-7789

NETHERLANDS
Rijswijk
CN Rood BV
Cort VD Lindenstraat 11-13
070-996360

NORWAY
Oslo
Morgenstierne & Co A/S
Konghellegate 3
02 356110

SINGAPORE
Singapore
Total Computer Systems PTE Ltd
20/23F Blk 12 50 Kallang Bahru
2934401

SOUTH AFRICA
Johannesburg
SACO Systems Pty Ltd
Box 46348/Orange Grove
011-291-861

SWEDEN
Stockholm
Optiscan
Box 14024 S 10440
8-635130

TAIWAN
Taipei
C C Tsay Assoc Inc
4 Fl 12 Lane 134
02-393-5760

INTERFACE SYSTEMS INC
462 Jackson Plaza
Ann Arbor, MI 48103
313-769-5900
Contact: Barry Belluci
■ Products & Services
Interactive terminals
Remote line printers
Teleprinters
Teleprinters, impact

INTERFACE TECHNOLOGY INC
10500 Kahlmeyer Dr
St Louis, MO 63132
314-426-6880
Contact: Michael E Smith
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Audio response units
Data entry terminals
Portable data entry terminals
Applications packages
Custom programs
Automatic answering units
Branch Sales Offices:
CA Mission Viejo
JHM Marketing Associates
26572 Matias Dr
714-586-6673
GA Atlanta
Flex-Comm International
3379 Peachtree Rd NE
404-237-9242
MA Wellesley
Datamart Inc
180 Linden St
617-235-5520
MO St Louis
Computime Inc
711 Old Ballas Rd
314-434-5995
NJ Bellmawr
Applied Delta Systems
Kor Center East Interstate Industrial Pk
609-227-4758
NY Great Neck
Harvey J Krasner & Assoc
87 Watermill Ln
516-935-7295
PA Pittsburgh
Applied Delta Systems
16 East West Dr
412-931-6593
TX Richardson
Datamatic Inc
725 South Central Expwy
214-234-4497
ENGLAND
Herts
Modular Technology
Box 117 Watford WD1 4PD
01-144923-44455
GERMANY, WEST
Keln
COMKO Computersystemges mbH
Neue Anschrift und Tel-Nr
Marsdorfer StraBe 76
01-149221-483051

INTERLAN INC
160 Turnpike Rd
Chelmsford, MA 01824
617-256-5888
Contact: Betsy Miller

INTERNATIONAL DATA SCIENCES INC
7 Wellington Road
Lincoln, RI 02865
401-333-6200
Contact: Donald Bousquet
■ Products & Services
Modem sharing units
Port sharing units
Line drivers
Modems, limited distance
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Response-time monitors
Technical control centers
Cables, electrical prefabricated extending
Data jacks and plugs
Error controllers
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:
AK Anchorage
Transalaska Data Systems
200 Center Ct
907-276-5616
AZ Phoenix
PLS Assoc Inc
4001 N 31st Ave
602-279-1531
CA Anaheim
Moxon Electronics
1970 S Santa Crus St
714-635-7600
DC Silver Spring
Terminal Networks Inc
118 Eldrid Dr
301-622-3535
FL Orlando
Col-Ins-Co Inc
1313 44th St
305-423-7615
IL Rolling Meadows
SEA
1225 Carnegie St
312-255-4820
MA Winchester
J & J Assoc
225 East St
617-729-5770
MO St Johns
Midwest Marketing
3606 Woodson Rd
314-426-2500
NJ Livington
Star Technical Sales Co
283 E North Fld Rd
201-992-7827
NY Rochester
Rotelcom
67 Chestnut St
716-546-5060
OH Cleveland
Lowry & Associates Inc
1440 Snow Rd
216-389-9200
PA King of Prussia
J E Cuesta & Co Inc
570 W DeKalb Pike
215-265-5800
TX Houston
Data Aids Assoc
1440 N Loop
713-862-6685
WA Seattle
Rush S Drake Assoc Inc
11524 15th Ave NE
206-763-2755
BRITISH COLUMBIA, CANADA
North Vancouver
National Electro Lab Ltd
1536 Columbia St
604-985-0511
ONTARIO, CANADA
Toronto ON
Allcom Data Ltd
2175 Sheppard Ave
416-492-9231

INTERNATIONAL RESOURCE DEVELOPMENT
30 High St
Norwalk, CT 06851
203-866-6914
Contact: Katherine Etelman
■ Products & Services
Data communications consultants
Branch Sales Offices:
JAPAN
Shibuya-ku
Fuji Corporation
Busicen Bldg 5-29-7 Jungu-mae
03-409-6291

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INTERSIL INC
10710 N Tantau Ave
Cupertino, CA 95014
408-996-5000
Contact: Mel Morris
■ Products & Services
Minicomputers
Add-on main memory
Branch Sales Offices:
CA Sunnyvale
Intersil
1272 Forgewood Ave
408-744-0618
CA Long Beach
Intersil
400 Oceangate
213-436-9261
CO Aurora
Intersil
5 Parker Pl
303-750-7004
FL Hollywood
Intersil
2700 N 29 Ave
305-920-2442
IL Hinsdale
Intersil
201 Ogden Ave
312-986-5303
MA Lexington
Intersil
2 Militia Dr
617-861-6220
MN Minneapolis
Intersil
6550 York Ave S
612-925-1844
NJ Englewood Cliffs
Intersil
560 Sylvan Ave
201-567-5585
OH Miamisburg
Intersil
228 Byers Rd
513-866-7328
TX Dallas
Intersil
12820 Hillcrest Dr
214-387-0539
ONTARIO, CANADA
Brampton
Intersil
338 Queen St E
416-457-1014

INTERSIL SYSTEMS DIV
1275 Hammerwood Ave
Sunnyvale, CA 94086
408-743-4442

■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, statistical (intelligent)
Remote network processors
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Add-on main memory

INTERSTATE ELECTRONICS CORP
1001 E Ball Road
Anaheim, CA 92803
714-635-7210
Contact: D D Kirsch
■ Products & Services
Digitized-voice processors
Graphic display terminals
Programmable terminals
Remote job entry terminals
Pulse and signal regenerators
Voice digitizers
Branch Sales Offices:
GA Atlanta
Interstate Elect Corp
2700 Cumberland Pkwy
404-432-2311
IL Schaumburg
Interstate Elect Corp
1375 Remington Rd
312-843-7232
OH Dayton
Interstate Elect Corp
333 W First St
513-461-2236
TX Houston
Interstate Elect Corp
9525 Katy
713-932-9035
VA Arlington
Interstate Elect Corp
1901 N Ft Meyer Dr
703-243-6660

INTERTEC DIVERSIFIED SYSTEMS INC
2625 Park Blvd
Palo Alto, CA 94306
415-326-8900
Contact: J A Lazzaro

INTERTEL INC
Six Shattuck Rd
Andover, MA 01810
617-681-0600
Advertising page 80
Contact: John Shepard
■ Products & Services
Line sharing units
Modem sharing units
Multiplexers, time division
Inverse multiplexers
Port selectors
Port sharing units
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Network management centers
Technical control centers
Computer/communications interfaces
Data access arrangement devices
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Voice adapters
Branch Sales Offices:
CA San Francisco
Intertel Inc
681 Market St
415-543-3800
CA Carson
Intertel Inc
454 E Carson Plaza Dr
213-516-8560
CO Denver
Intertel Inc
50 S Steele St
303-399-1165
GA Atlanta
Intertel Inc
14 Perimeter Center E
404-394-0434
IL Rosemont
Intertel Inc
10600 W Higgins Rd
312-298-9383
IN Indianapolis
Intertel Inc
5650 W 85th St
317-875-0864
MD Rockville
Intertel Inc
11428 Rockville Pike
301-770-2272
MA Framingham
Intertel Inc
5 Edgell Rd
617-879-5859
MI Birmingham
Intertel Inc
725 S Adams Rd
313-644-2777
MN Minneapolis
Intertel Inc
6750 France Ave S
612-929-9511
MO Creve Coeur
Intertel Inc
11500 Olive St Rd
314-569-3390
MO Kansas City
Intertel Inc
1100 Main St
816-474-5022
NJ Secaucus
Intertel Inc
One Harmon Pl
201-348-6666
NC Charlotte
Intertel Inc
501 Archdale Dr
704-523-4101
OH Columbus
Intertel Inc
100 E Wilson Bridge Rd
614-885-5312
PA Feasterville
Intertel Inc
652 W Street Rd
215-322-5100
TN Germantown
Intertel Inc
2129 S Germantown Rd
901-755-6620
TX Dallas
Intertel Inc
1545 W Mockingbird La
214-688-0797
TX Houston
Intertel Inc
10333 Northwest Frwy
713-682-1118
WA Bellevue
Intertel Inc
1333 NE Bellevue-Redmond Rd
206-451-8180
ONTARIO, CANADA
Markham
Signatel Ltd
89 Telson Rd
416-495-9229
ENGLAND
London
Data Logic Ltd
29 Marylebone Rd
01-486-7288
ISRAEL
Ramat Hasharon
RDT Electronics Ltd
46 Sokolov St
483211-5
ITALY
Milano
Elettronucleonica s p a
Piazza De Angeli
02-4982451
NETHERLANDS
Uden
Stock Control International
Klavecimbellaan 3
04132-65551
SWITZERLAND
Lausanne
Datalec S a r l
27 Rue de Bourg
021-229238

INT'L MANAGEMENT SERVICES INC
Two Frederick St
Framingham, MA 01701
617-879-5955
Contact: Terry D Pardoe
■ Products & Services
DDP systems
Local networks
Microcomputer/ microprocessor systems
Word processors, communicating
Data security devices: software security modules
Data communications consultants
Educational services
Branch Sales Offices:
NH Nashua
Int'l Management Services Inc
2 Westwray Dr

IPL SYSTEMS INC
360 Second Ave
Waltham, MA 02154
617-890-6620
Contact: P Aborn
■ Products & Services
Mainframe computers
Branch Sales Offices:
CA Santa Clara
IPL Systems Inc
2700 Augustine Dr
408-496-0222
CA Los Angeles
IPL Systems Inc
1010 Westwood Blvd
213-824-0021
DC Falls Church
SMS Data Products Group Inc
7777 Leesburg Pike
703-827-0640

GA Atlanta
IPL Systems Inc
5500 Interstate No Pkwy
404-952-6445

IL Oak Brook
IPL Systems Inc
2603 West 22nd St
312-789-1280

MI Southfield
IPL Systems Inc
620 Travelers Tower;26555 Evergreen Rd
313-352-9680

NJ Paramus
IPL Systems Inc
Paramus Plaza I;140 Route 17 North
201-967-1611

NY New York
IPL Systems Inc
370 Lexington Ave
212-685-5750

PA Trevose
IPL Systems Inc
3 Neshaminy Interplex
215-638-9220

TX Houston
IPL Systems Inc
5005 Mitchelldale
713-688-6808

TX Dallas
IPL Systems Inc
14800 Quorum Dr
214-239-6536

ISS DIV./SPERRY UNIVAC
3333 Scott Blvd
Santa Clara, CA 95051
408-496-3333
■ Products & Services
Disk drives, large

ITOM INTERNATIONAL COMPANY
PO Box 1415
Los Altos, CA 94022
415-948-4516
Contact: Omri Serlin
■ Products & Services
Data communications consultants

ITT BUSINESS COMMUNICATIONS SYSTEMS
1717 W 16th St
Tempe, AZ 85281
602-894-7000
Contact: Ira Lubert
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Interactive terminals
Terminal controllers
Video data terminals (KSR)

Branch Sales Offices:

AZ Phoenix
ITT Business Communications Systems
2406 24th St
602-267-9191

CA Century City
ITT Business Communications Systems
10100 Santa Monica Blvd
213-879-1631

CA Los Alamitos
ITT Business Communications Systems
11021 Winners Circle
213-594-6851

CA Oakland
ITT Business Communications Systems
1221 Broadway
415-451-9411

CA Sunnyvale
ITT Business Communications Systems
1250 Oakmead Pkwy
408-730-1700

CO Denver
ITT Business Communications Systems
2480 W 22nd St
303-433-8607

CT Glaston Bury
ITT Business Comunications Systems
76 Eastern Blvd
203-633-6724

FL Miami
ITT Business Communications Systems
7855 NW 12th St
305-593-1945

GA Atlanta
ITT Business Communications Systems
2260 N Druid Hills NE
404-329-9472

IL Oak Brook
ITT Business Communications Systems
2301 W 22 St
312-920-2770

IN Indianapolis
ITT Business Communications Systems
539 S Turtle Creek
317-783-2974

IA Davenport I
ITT Business Communications Systems
3719 Bridge Ave
319-332-6586

LA Metairie
ITT Business Communications Systems
2900 Veterans Memorial Blvd
504-838-8021

MD Lanham
ITT Business Communications Systems
9600 George Palmer Hwy
301-459-3000

MA Burlington
ITT Business Communications Systems
60 Mall Rd
617-273-3474

MI Birmingham
ITT Business Communications Systems
30800 Telegraph Rd
313-644-5995

MN Eden Prairie
ITT Business Communications Systems
7525 Mitchell Rd
612-937-2067

MO St Louis
ITT Business Communications Systems
1810 Craig Rd
314-434-3199

MO Kansas City
ITT Business Communications Systems
1575 Universal Ave
816-483-6530

NJ Edison
ITT Business Communications Systems
20 Mayfield Ave
201-225-3232

NY New York
ITT Courier Terminal Systems Inc
745 5 Ave
212-751-0500

NY Rochester
ITT Business Communications Systems
300 White Spruce Blvd
716-424-6250

NC Charlotte
ITT Business Communications Systems
5 Woodlawn Green
704-523-2401

OH Cincinnati
ITT Business Communications Systems
4015 Executive Park Dr
513-563-8050

OH Independence
ITT Business Communications Systems
4807 Rockside Rd
216-447-0455

OH Columbus
ITT Business Communications Systems
2814 South Hamilton Rd
614-866-9358

OK Oklahoma City
ITT Business Communications Systems
909 S Meridian
405-949-0077

PA King of Prussia
ITT Business Communications Systems
300 Valley Forge Plaza
215-265-7620

PA Pittsburgh
ITT Courier Terminal Systems Inc
Robinson Plaza 2
412-923-2446

TX Dallas
ITT Business Communications Systems
4141 Blue Lake Cir
214-233-9002

TX Houston
ITT Business Communications Systems
3131 Briarpark Dr
713-780-0309

TX Austin
ITT Business Communications Systems
512 E Riverside Dr
512-447-1184

WA Seattle
ITT Business Communications Systems
2121 4th Ave
206-382-9187

WI Brookfield
ITT Business Comunications Systems
15850 W Bluemound Rd
414-782-0776

BRITISH COLUMBIA, CANADA
Vancouver
ITT Business Communications Systems
1107-750 W Pender St
604-682-2751
ONTARIO, CANADA
Mississauga
ITT Business Communications Systems
6889 Rexwood Rd
416-676-9930
QUEBEC, CANADA
St Laurent
ITT Business Communications Systems
7575 Trans-Canada Hwy
514-337-4841

ITT-ELECTRO/OPTICAL
7635 Plantation Rd
Roanoke, VA 24019
703-563-0371
Contact: W McCreary
■ Products & Services
Lightwave (fiber optic) systems
Infrared systems
Cables, lightwave (optical fiber)

ITT - US TRANSMISSION SYSTEMS INC
1 Whitehall St
New York, NY 10004
212-558-9600
Contact: T J Chisholm
■ Products & Services
Specialized carriers
Value-added carriers

ITT WORLD COMMUNICATIONS INC
67 Broad St
New York, NY 10004
800-424-1170
Contact: Jon Reese
■ Products & Services
Facsimile-service carriers
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Value-added carriers
Branch Sales Offices:
CA San Francisco
ITT Worldcom
450 Mission St
415-421-1303
CA Los Angeles
ITT Worldcom
1200 Wilshire Blvd
213-481-1470
DC Washington DC
ITT Worldcom
1707 L St NW
202-296-6426
IL Chicago
ITT Worldcom
200 W Monroe
312-263-4712
MI Southfield
ITT Worldcom
4000 Town Center
313-358-1860
NY New York
ITT Worldcom
67 Broad
212-797-3300
PA Ft Washington
ITT Worldcom
455 Pennsylvania Ave
215-628-9202
TX Houston
ITT Worldcom
2190 N Loop W
713-681-1814

THE DAVID JAMISON CARLYLE CORP
2049 Century Park East
Los Angeles, CA 90067
213-277-4562
Contact: Dennis Cagan
■ Products & Services
Front-end processors
Line sharing units
Modem sharing units
Multiplexers, frequency division
Inverse multiplexers
Multiplexers, statistical (intelligent)
Multiplexers, group band
Packet processors
Port selectors
Port sharing units
Remote network processors
Acoustic couplers
Line drivers
FM systems
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230:4 kb/s)
Modem eliminators
Data content monitors
Error rate detectors
Protocol analyzers
Network management centers
Technical control centers
DDP systems
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Minicomputers
Cassette drives
Disk drives, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Badge readers
Bar code readers
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Data access arrangement devices
Furniture, cabinets, terminal enclosures
Paper for terminals
Protocol converters
Ribbons and supplies for terminals and printers
Data communications consultants
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
CA San Francisco
David Jamison Carlyle Corp
415-254-9378
CA Orange County
David Jamison Carlyle Corp
714-640-0355
GA Atlanta
David Jamison Carlyle Corp
404-922-8170
HI Honolulu
David Jamison Carlyle Corp
808-531-5136
IL Chicago
David Jamison Carlyle Corp
312-975-1500
NJ Matawan
David Jamison Carlyle Corp
201-946-9669
TX Dallas
David Jamison Carlyle Corp
214-458-0888
TX Houston
David Jamison Carlyle Corp
713-530-4098

CD JOHNSON/ASSOC LTD
56 Sparks St #100
Ottawa, ON K1P 5A9
Canada
613-238-6069
Contact: Charles Johnson
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, broadband, half-group (to 19.2 kb/s)
Remote line printers
Teleprinters, impact
Teleprinters, non-impact
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Automatic calling units

JOHNSON SYSTEMS INC
7923 Jones Branch Dr
McLean, VA 22102
703-821-1700
Contact: Marc C Joseph
■ Products & Services
Network management centers
Branch Sales Offices:
IL Des Plaines
Johnson Systems Inc
220 E Devon Ave
312-297-0300
TX Dallas
Johnson Systems Inc
2880 LBJ Frwy
214-247-3252
ARGENTINA
1004-Buenos Aires
SCI-Argentina
San Martin 881
31-2019
BRAZIL
Rio de Janeiro
SCI-Brazil
Rua Jardim Botanico 635
21/286-0202

ENGLAND
Watford
Johnson Systems UK
10 Station Rd
011 44 923 46255

FINLAND
Helsinki
Oy Suomen Data Analys AB
Kaivokatu 10 B
062/7252

FRANCE
Paris
Carus France
121 Rue Aristide Briand
270 44 44

GERMANY, WEST
4000 Dusseldorf
Johnson Systems GmbH
Hunsrueckenstrasse 22
011 49 211 32 09 95

ITALY
Milano
Selesta Gestione Centri SRL
Via A Cantore 8H
02/874246

JAPAN
Tokyo
K K Ashisuto
3-4-1 Nishi-Shimbashi
03/437-0921

SOUTH AFRICA
Marshalltown
George Kendall Pty Ltd
Box 61182
834-2747

SWEDEN
Stockholm
Data Analys Sverige AB
Box 7069
08 21 84 10

KAPUSI LABORATORIES
2121 S El Camino Real
San Mateo, CA 94403
415-573-5475
Contact: John Kapusi
■ Products & Services
Modem sharing units
Line drivers
Modems, limited distance
Error rate detectors
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Data communications consultants
Branch Sales Offices:
BRITISH COLUMBIA, CANADA
Coquitlam
Comtest Communications Products Ltd
674 Hailey St
604-525-7955

ONTARIO, CANADA
Nepean
Comtest Communications Products Ltd
80 Colonnade Rd
613-226-2301

ENGLAND
Bournemouth
Intertech Electronics Ltd
Lorne Park House;Lorne Park Rd
0202-292131

FRANCE
92310 Sevres
Tekelec Airtronic
Cite de Bruyeres;Rue Carle Vernet
1 027-75-35

GERMANY, WEST
8000 Munchen 2
Tekelec Airtronic GmbH
Nussbaumstr 4
089-594621

GREECE
Athens
ACS Prime Computer
7 Dion Areopagitou Str

KOREA REP (REP)
Seoul
Buhae Corp
36-1 Namdaemoon-Ro;5Ka, Jung-Ku
22,4404, 604-2261

NEW ZEALAND
Wellington
Philips Electrical Industries of NZ Ltd
181-195 Wakefield St
858-858

SINGAPORE
Singapore
Paterson Simons & Co (S) Pte Ltd
Maxwell Rd;Box 897
912222

SWEDEN
Solna
Svea Data Comm
Box 3004
08-82-03 35

SWITZERLAND
Geneva
Interep SA
4 cours des Bastions
022/20 83 46

TAIWAN
Sungkiang
Leadmark Industries Co Ltd
6F-2, #6, Lane 69, Sungkiang Rd
536 1157 9

Products are listed alphabetically in the **Products & Services Directory, page 7.**

KAUFMAN RESEARCH MFG INC
2260 Mora Dr
Mountain View, CA 94040
415-962-8811
Contact: Charles J Chapin
■ Products & Services
Concentrators
Front-end processors
Message switchers
Modem sharing units
Port sharing units
Remote network processors
Protocol converters
Data communications consultants
Branch Sales Offices:
AK Anchorage
Drew and Associates
Box 10-1888
907-345-1900

CA Torrance
Edwards Associates
2808 Oregon Court Bldg L
213-328-9770

CO Englewood
Barnhill Associates Inc
7076 S Alton Way Bldg A
303-779-3600

GA Atlanta
F&M Associates
P.O. Box 9901
404-451-2293

IN Carmel
Systems Engineering Assoc
624 South Range Line Rd
317-846-2591

MD Bethesda
Powell-Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535

NJ Harrington Park
Glasgal Communication Services
103 First St
201-768-8082

NY E Syracuse
Ossmann Peripherals
6666 Old Collamer Rd
315-437-6666

OH Rocky River
ARC Associates Inc
21360 Center Ridge Rd
216-333-8375

WA Bellevue
Thorson Co Northwest
12301 NE 10th Pl
206-455-9180

QUEBEC, CANADA
Dollard Des Ormeaux
Dyran Communication Products
3 Boyer Rd
514-620-7910

AUSTRIA
Austria
Neve Organisation maschinen, GMBH
Untere Donaustrasse 13-15;1020 Wien
02-2224-84-14

KENNEDY CO
1600 Shamrock Ave
Monrovia, CA 91016
213-357-8831
Contact: R E Bartholonew
■ Products & Services
Cartridge drives
Tape drives, magnetic

KEYTEK INSTRUMENT CORP
12 Cambridge St
Burlington, MA 01803
617-272-5170
Contact: Michael Hopkins
■ Products & Services
Electrical-parameters test equipment
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
CA Santa Clara
Mollard Mktg
3350 Scott Blvd
408-727-2050

CA Thousand Oaks
Max Shovlowsky
311 Corrine Hill Ct
805-498-6547

CT Mt Carmel
Scientific Devices CT
3074 Whitney Ave
203-248-9361

GA Atlanta
Kemp Instruments
5725 Buford Hwy NE
404-452-5080

IA LaGrange
PVA Co
521 S LaGrange Rd
312-579-9300

MA Waltham
Scientific Devices NE
181 West St
617-890-2252

MN Minneapolis
Hi-Lite Sales
5603 Lyndale Ave
612-861-6051

NJ Englewood Cliffs
Scientific Devices East
210 Sylvan Ave
201-871-3916

NC Winston Salem
Radco
614 First Union Natl Bank Bldg
919-722-9671

OH Columbus
Measurement Instruments
2840 Fisher Rd
614-274-1144

PA Philadelphia
Technical Instrument Sales
523 Bethlehem Pk
215-836-2222

TX Dallas
True Technology
Box 12688
214-691-7870

VA Springfield
Scientific Devices DC
7643 Fullerton Rd
703-451-6500

WA Seattle
Eicher Richards
2727 NE Blakeley St
206-523-7888

WALTER KIDDE/DIV OF KIDDE INC
675 Main St
Belleville, NJ 07109
201-759-5000
Contact: Lee Warner
■ Products & Services
Fire detection/protection equipment

KINEX CORP
6793 Cross Bayou Dr
Largo, FL 33543
813-541-6404
Contact: Robert Budenstein
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Error rate detectors
Network management centers
Technical control centers
Automatic answering units
Data communications consultants
Branch Sales Offices:

AL Huntsville
Col-Ins Co Inc
Box 4028
800-327-6600

AZ Scottsdale
Barnhill Associates Inc
7319 E Stetson Dr
602-947-7841

CA Anaheim
Moxon Electronics
1970 S Santa Cruz St
714-635-7600

CA San Diego
Moxon Electronics
8388 Vickers St #232
714-565-1557

CA Santa Clara
Moxon Electronics
2376 Walsh Ave
408-727-6491

CO Englewood
Barnhill Associates Inc
7076 S Alton Way
303-779-3600

FL Orlando
Col-Ins Co Inc
1313 44th St
305-423-7615

FL Coral Springs
Col-Ins Co Inc
Box 8827
800-432-4480

GA Clarkston
Col-Ins Co Inc
Box 559
800-327-6600

HI Honolulu
Unitek Computer Service
50 S Beretania St
800-523-8881

IL Rolling Meadows
SEA Inc
1225 Carnegie St #107
312-255-4820

IN Carmel
SEA Inc
624-B So Range Line Rd
317-846-2591

LA Baton Rouge
Barnhill Associates Inc
440 North Foster
504-924-6826

MD Gaithersburg
Technical Sales Associates
19544 Club House Rd
301-258-9790

MA Fairhaven
Data Brain Inc
Box 161
617-994-3944

MI Madison Heights
WKM Asssociates Inc
345 West Girard
313-588-2300

MN Minneapolis
SEA Inc
7601 N Kentucky Ave
612-425-4455

MO St Louis
SEA Inc
11715 Administration Dr
314-567-7150

NJ Ridgewood
Instrumentation Sales Co
171 E Ridgewood Ave
201-445-5210

NM Albuquerque
Barnhill Associates Inc
1410 D Wyoming NE
505-299-7658

NY East Syracuse
Ossmann Instruments Inc
6666 Old Collamer Road
315-437-6666

NY Rochester
Ossmann Instruments Inc
130 Allens Creek Rd
716-473-5720

NY Vestal
Ossmann Instruments Inc
300 Main St
607-785-9947

NY Saratoga Springs
Ossmann Instruments Inc
518-377-8604

NC Winston-Salem
Col-Ins Co Inc
Box 11607
800-327-6600

OH Cleveland
WKM Associates Inc
16141 Puritas Ave
216-267-0445

OH Dayton
WKM Associates Inc
7913 S Suburban Rd
513-434-7500

OR Beaverton
E S Chase Co
4095 SW 144th St
503-641-4111

PA Pittsburgh
WKM Associates Inc
90 Clairton Blvd
412-892-2953

PA Eagleville
Instrumentation Sales Co
Box 176
215-265-5670

SC Greenville
Col-Ins Co Inc
Box 5091 Sta B
800-327-6600

TN Nashville
Col-Ins Co Inc
1804 Linden Ave
800-327-6600

TX Austin
Barnhill Associates Inc
111 W Anderson Ln #221
512-451-0217

TX Houston
Barnhill Associates Inc
10606 Hempstead Hwy #132
713-688-9971

TX Richardson
Barnhill Associates Inc
1101 Executive Dr East #110
214-231-2573

UT Murray
Barnhill Associates Inc
5180 S 300 West
801-262-3000

WA Seattle
E S Chase Co
Box 80903
206-762-4824

WI Brookfield
SEA Inc
675 N Brookfield Rd
414-784-9379

KMW SYSTEMS INC
8307 Highway 71W
Austin, TX 78735
512-288-1453
Contact: Fred Klingensmith
■ Products & Services
Protocol converters
Branch Sales Offices:

AZ Phoenix
Peripherals Inc
6525 N 15 Ave
601-274-8999

CA Mission Viejo
Western Data Corporation
26701 Caceres Cir
714-768-3345

CO Littleton
Davis Associates
709 W Littleton Blvd
303-795-1400

IL Park Ridge
Ad Tech Inc
701 South Lincoln Ave
312-692-7320

MA Waltham
CSI Systems
60 Hickory Dr
617-890-0127
NJ Fort Lee
Technical Marketing Associates
2460 Lemoine Ave
201-244-6911
OH Chagrin Falls
Koepf Associates
Box 16
216-247-5129
PA Huntingdon Valley
Lynbar Group Inc
3741 Ridgeview Rd
215-947-3554
TX Dallas
SCI Sales Inc
13771 N Central Expwy
214-234-8072
TX Houston
SCI Sales Inc
1199 Nasa Rd 1
713-488-3728
VA McLean
Mega/Mark Ltd
7927 Jones Branch Dr
703-356-6200
WA Bellevue
Showalter Instruments Inc
1521-130th NE
206-455-4922
ONTARIO, CANADA
Scarborough
Associated Test Equipment Ltd
3530 Pharmacy Ave
416-497-2208
AUSTRALIA
Artarmon
Datamatic Ltd
60/64 Dickson Ave
43 3333

KURTA CORP
206 S River Rd
Tempe, AZ 85281
602-968-8709
Contact: Dick Dunikoski
■ Products & Services
Interactive terminals
Telescriber
Computer/communications interfaces

KURZWEIL COMPUTER PRODUCTS
33 Cambridge Pkwy
Cambridge, MA 02142
617-864-4700
Contact: Peter Atwood
■ Products & Services
Data entry terminals

LAMBDA ELECTRONICS
515 Broad Hollow Rd
Melville, NY 11747
516-694-4200
Contact: Barry Chenes
■ Products & Services
Electrical-parameters test equipment
Uninterruptible power supplies, line correctors, etc

LANE TELECOMMUNICATIONS
655 Deep Valley Dr
Rolling Hills Estates, CA 90274
213-377-3346
Contact: Judy Radkin
■ Products & Services
Minicomputers
Data entry terminals
Programmable terminals
Point of sale terminals
Terminal controllers
Branch Sales Offices:
NY New York
Lane Telecommunications Inc
One World Trade Center
212-839-9021

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

LANIER BUSINESS PRODUCTS INC
1700 Chantilly Dr NE
Atlanta, GA 30324
404-329-8000
Advertising pages 126-127
Contact: Susan Story
■ Products & Services
Word processors, communicating

LAWRENCE PACKAGING SUPPLY CORP
113 North 13 St
Newark, NJ 07107
201-485-4400
Contact: Bruce Thiel
■ Products & Services
Paper for terminals
Ribbons and supplies for terminals and printers
Used equipment
Branch Sales Offices:
CA City of Commerce
Bob Vorisek
6823 Watcher St
213-722-2033
IN Indianapolis
Mark Hutchinson
6300 Brookville Rd Unit B
317-353-9313
MA Worcester
Frank Flandreau
340 Main St Comm Bldg
617-754-8714
NJ Newark
Robert Downing
113 N 13 St
201-485-4400

LEADING EDGE INC.
225 Turnpike St
Canton, MA 02021
617-828-8150
Contact: Sandra Fromm
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Microcomputer/ microprocessor systems
Add-on main memory
Disks, floppy
Data entry terminals
Programmable terminals
Interactive terminals
Applications packages
Word processing packages
Computer/communications interfaces
Ribbons and supplies for terminals and printers
Educational services

LEAR SIEGLER INC/
DATA PRODUCTS DIV
714 N Brookhurst
Anaheim, CA 92803
714-774-1010
Contact: Bob Wolkowicz
■ Products & Services
Audio response units
Data entry terminals
Graphic display terminals
Programmable terminals
Teleprinters, impact
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:
CA Anaheim
Lear Siegler Inc
714 N Brookhurst
714-774-1010
CA Dublin
Lear Siegler Inc
6375 Clark Ave
415-828-6941
FL Altamonte Springs
Lear Siegler Inc
101 Wymore Rd
305-869-1826
IL Elmhurst
Lear Siegler Inc
970 N Oaklawn Ave
312-279-5250
MA Waltham
Lear Siegler Inc
303 Wyman St
617-890-7093
PA Trebose
Lear Siegler Inc
Two Neshaminy Interplex
215-245-1520
TX Houston
Lear Siegler Inc
8401 Westheimer Rd
713-780-2585
ENGLAND
Brookwood Surrey
Lear Siegler Data Products Ltd
Orchard House Counaught Rd
44-4867-80666

LEAR SIEGLER INC
SIERRA ELECTRONIC DIV
3885 Bohannon Dr
Menlo Park, CA 94025
415-321-5374
Contact: Darrell F Bell
■ Products & Services
Electrical-parameters test equipment
Error rate detectors
Branch Sales Offices:
AL Birmingham
Lear Siegler-Sierra Elect Div
3218 Sharpsburg Cir
205-956-1434
AZ Scottsdale
Lear Siegler-Sierra Elect Div
8702 E Highland Av
602-994-8253
CA San Jose
Lear Siegler-Sierra Elect Div
2300 Samaritan Dr
408-377-8737
CO Sandy
Lear Siegler-Sierra Elect Div
9143 S Maison Dr
801-572-1739
FL Raleigh
Lear Siegler-Sierra Elect Div
Box 31544
919-782-6143
GA Conyers
Lear Siegler-Sierra Elect Div
1790 Holmes Dr
404-483-1518
MO San Antonio
Lear Siegler-Sierra Elect Div
710 Meadow Side
512-674-4842

NC Burlington
Lear Siegler-Sierra Elect Div
Box 2448
919-584-5492

NC Lexington
Lear Siegler-Sierra Elect Div
301 Oxford Rd
419-522-3000

PA Dallas
Lear Siegler-Sierra Elect Div
RD #5 Box 378-4
717-675-4882

WA Sherwood
Lear Siegler-Sierra Elect Div
Route 3 Box 615
503-628-2733

LEASAMETRIC
1164 Triton Dr
Foster City, CA 94404
415-574-4441
Contact: Bruce Swander
■ Products & Services
Modem sharing units
Multiplexers, statistical (intelligent)
Acoustic couplers
Line drivers
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Response-time monitors
RTS emulator
Cassette drives
Disk drives, floppy
Batch terminals
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Video data terminals (RO)
Lease and resale organizations
Used equipment

Branch Sales Offices:

AZ Phoenix
Leasametric
2810 S 24th St
602-258-1225

CA Anaheim
Leasametric
2100 East Kateua
714-634-9525

CA Culver City
Leasametric
5780 Uplander Way
213-670-0461

CA San Diego
Leasametric
7292 Opportunity Rd
714-565-7475

CA Foster City
Leasametric
1155 Triton Dr
415-574-5797

CO Englewood
Leasametric
7338 Alton Way
303-741-4900

FL Orlando
Leasametric
1203 E Livingston St
305-894-1700

GA Norcross
Leasametric
6050 McDonough Dr
404-449-6123

IL Bensenville
Leasametric
755 Route 83
312-595-2700

MD Gaithersburg
Leasametric
9246 Gaither Rd
301-948-9700

MA Woburn
Leasametric
24 Cummings Pk
617-935-7780

MN Broomington
Leasametric
10740 Lyndale Ave
612-881-4050

NJ Allendale
Leasametric
6 Pearl Ct
201-825-9000

NY Plainview
Leasametric
88 Sunnyside Blvd
516-349-0535

NY New York
Leasametric
2 Penn Plaza 9th Fl
212-594-6900

NY Syracuse
Leasametric
1 Northern Concourse
315-455-5611

OH Dayton
Leasametric
6500 Poe Ave
513-898-1707

PA Folcroft
Leasametric
701 Asnland Ave
215-583-2000

TX Houston
Leasametric
720 N Post Oak Rd
713-682-8920

TX Dallas
Leasametric
13721 Omega Rd
214-661-9193

WA Redmond
Leasametric
2865 152nd Ave NE
206-883-6510

ALBERTA, CANADA
Calgary
Can Leasametric
1331 44th Ave NE
403-276-8731

ONTARIO, CANADA
Mississauga
Leasametric
7040 Torbram Rd
416-676-1897

ONTARIO, CANADA
Ottawa
Can Leasametric
Box 4293, Station E
613-238-3774

QUEBEC, CANADA
St Laurent
Can Leasametric
100 Alexis Nihon Blvd
514-878-1299

THE LEASEMARK CORPORATION
52 Church St
Boston, MA 02116
617-357-5220
Contact: Robert D Murphy
■ Products & Services
Front-end processors
Remote network processors
Timesharing/service bureaus

LEE DATA CORP
10206 Crosstown Circle
Eden Prairie, MN 55344
612-932-0300
Contact: John R Rotter
■ Products & Services
Interactive terminals
Terminal controllers

Branch Sales Offices:

AZ Tucson
International Electronic Marketing
1518 East Broadway
602-622-7707

CA Marina Del Rey
Lee Data Corp
4640 Admiralty Way
213-827-5452

CA Burlingame
Lee Data Corp
500 Airport Blvd
415-342-6554

CO Englewood
Lee Data Corp
309 Inverness Dr S
303-694-1227

CT Danbury
Lee Data Corp
Four Franklin St
203-792-0004

GA Atlanta
SMC Computer Corp
4700 Chamblee Dunwoody Rd
404-452-7410

IL Oak Brook
Lee Data Corp
616 Enterprise Dr
312-323-9292

MD Severna Park
Hellems Associates
517 Benfield Rd
301-647-6470

MI Southfield
Lee Data Corp
16215 West Twelve Mile Rd
313-552-8060

MO Kansas City
Lee Data Corp
10920 Ambassador Dr
816-891-2444

NJ West Caldwell
Lee Data Corp
1140 Bloomfield Ave
201-575-8326

NM Las Cruces
Sota Rep Ltd
323 First National Tower
505-523-4480

NY New York
Lee Data Corp
18 East 48th St
212-838-7611

PA Bethel Park
Lee Data Corp
641 Clifton Rd
412-835-9080

PA Pottstown
Hellems Associates
Ellis Woods Road RD
215-948-0695

TN Ashland
SMC Computer Corp
Route 4 Box 116A
615-797-3706

TX Houston
System Technology Associates
Box 90057
713-440-8340

TX Austin
System Technology Associates
7115 Burnet Rd
512-451-2018

TX Dallas
System Technology Associates
11325 Pegasus St
214-343-0845

LEMCOM SYSTEMS INC
2104 W Peoria Ave
Phoenix, AZ 85029
602-944-1543
Contact: Terry Siegrist
■ Products & Services
Concentrators
Front-end processors
Packet processors
Port sharing units
Local network interfaces
Microcomputer/ microprocessor systems
Computer/communications interfaces
Data compression devices
Protocol converters
Satellite delay compensation units
Switches, data communications: automatic

LEXICON INC
60 Turner St
Waltham, MA 02154
617-891-6790
Contact: Ron Noonan
■ Products & Services
Graphic display terminals
Programmable terminals
Terminal controllers
Video data terminals (RO)
Branch Sales Offices:

CA Sunnyvale
Inter-Link Systems
580 Weddell Dr
408-744-1930

CA Torrance
Edwards Assoc
2808 Oregon Ct Bldg L
213-328-9770

IN Munster
Bexdata Ltd
8224 Calumet Ave
312-221-1411

MA Harvard
Harvard Data Equipment
Warren Ave
617-456-8037

LEXIDATA CORP
755 Middlesex Trnpk
Billerica, MA 01865
617-663-8550
Contact: Gail Brown
■ Products & Services
Graphic display terminals
Branch Sales Offices:

CA Laguna Hills
Lexidata Corporation
23265 South Pointe
714-855-1163

IL Schaumburg
Lexidata Corporation
955-B N Plum Grove
312-882-4333

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

LEXITRON CORP
1840 De Havilland Dr
Thousand Oaks, CA 91359
805-499-5911
Contact: Roger Fisher
■ Products & Services
Word recognition units
Word processors, communicating
Branch Sales Offices:

AK Juneau
Capital Office Supply
174 S Franklin St
907-586-2830

AZ Phoenix
Lexitron Corp
201 N Central Ave
602-271-0406

AR Little Rock
Automated Business Systems
6701 W Twelfth St
501-663-6304

CA Los Angeles
Lexitron Corp
3550 Wilshire Blvd
213-487-3191

CA Sacramento
Lexitron Corp
1540 Riverpark Dr
916-929-2074

CA San Diego
Lexitron Corp
600 B St
714-239-5177

CA San Francisco
Lexitron Corp
One Maritime Plaza
415-781-2450

CA Santa Clara
Lexitron Corp
2540 Mission College Blvd
408-988-8732

CA Santa Ana
Lexitron Corp
1633 E Fourth St
714-547-9684

CO Colorado Springs
Automated Business Systems
1235 Lake Ave
303-576-8282

CO Denver
Automated Business Systems
55 W Fifth Ave
303-825-1348

FL Tampa
American Business Systems
5123 Nebraska Ave
813-238-9564

GA Atlanta
Lexitron Corp
OMNI International S
404-525-7426

ID Boise
Hubco Data Products Corp
152 S Cole
208-377-2320

IL Chicago
Lexitron Corp
180 N La Salle St
312-263-0930

IL Des Plaines
Lexitron Corp
999 E Touhy Ave
312-263-0930

KS Kansas City
Brelsford Office Systems Inc
1118 N Seventh St
913-321-2662

LA Baton Rouge
EWA Corp
1885 Wooddale Blvd
504-927-9070

MD Baltimore
Lexitron Corp
201 N Charles St
301-244-0455

MA Boston
Lexitron Corp
One Faneuil Hall Marketplace
617-523-1061

MI Detroit
IBEC Inc
27380 W Nine Mile Rd
313-357-2002

MN Minneapolis
McNallan's Office Products
4074 W Broadway
612-535-2392

MO St Louis
Automated Typing Systems Inc
1790 S Brentwood Blvd
314-962-9002

MT Helena
Capital Office Equipment Inc
323 N Last Chance Gulch
406-442-3480

NJ East Orange
Lexitron Corp
60 Evergreen Pl
201-678-4965

NM Albuquerque
Total Business Systems
4801 Indian School Rd NE
505-265-3511

NM Gallup
Stevens & Heights CPA
101 W Aztec
505-722-4433

NM Roswell
Computer Solutions
500 N Main St
505-622-6910

NY New York
Lexitron Corp
600 Third Ave
212-986-9220

OH Cincinnati
Lexitron Corp
10810 Indeco Ct
513-984-6482

OH Columbus
Lexitron Corp
6530 Singletree Dr
614-436-1000

OK Oklahoma City
Automated Business Systems
2919 United Founders Blvd
405-848-4863

OK Tulsa
Automated Business Systems
4949 E 68 St
918-494-4731

OR Eugene
National Photocopy Corp
3629 Franklin Blvd
503-747-0123

OR Portland
CTR Business Systems
825 SW 14 St
503-227-2414

PA Philadelphia
Lexitron Corp
1845 Walnut St
215-567-6820

TX Austin
Lexitron Corp
8701 Shoal Creek Rd
512-454-5633

TX Dallas
Lexitron Corp
10300 N Central Expwy
214-696-3384

TX Houston
Lexitron Corp
7171 Harwin
713-974-4141

TX San Antonio
Lexitron Corp
110 Avenue E
512-223-3004

UT Murray
Hubco Data Products Corp
5248 S Pinemont
801-262-3457

VA Arlington
Lexitron Corp
1700 N Moore St
703-522-6773

WA Redmond
Lexitron Corp
2121 4th Ave
206-382-9110

WA Spokane
ABC Office Products
East 7322 Bdwy
509-922-4600

WI Brookfield
Lexitron Corp
200 Executive Dr
414-784-7711

WI Oshkosh
Oshkosh Office Supply Co
923 S Main St
414-235-8200

LINKABIT CORPORATION
A MA/COM COMPANY
3033 Science Park Rd
San Diego, CA 92121
714-457-2340
Contact: Katherine S Torres
■ Products & Services
Multiplexers, frequency division
Multiplexers, time division
Packet processors
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, broadband, super-group (to 230.4 kb/s)
Error rate detectors
Teleconferencing networks
Data compression devices
Data security devices: encoder/decoders
Data security devices: software security modules
Switches, data communications: automatic
Branch Sales Offices:
DC Washington
Don Marcopulos

MD Germantown
Linkabit Corporation
11717 Exploration Ln
301-428-3410

MA Burlington
Linkabit Corporation
16 New England Exec Pk
617-273-2670

LM ERICSSON
TELECOMMUNICATIONS
100 Crossways Park W
Woodbury, NY 11797
516-364-1111
Contact: James Gorak
■ Products & Services
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX,EPBX, etc.)
Branch Sales Offices:
CA San Diego
L M Ericsson Telecommunications Inc
3940 Ruffin Rd
714-569-8110

CA Santa Ana
L M Ericsson Telecommunications Inc
1701 East Edinger
714-558-3700

CT Rocky Hill
L M Ericsson Telecommunications Inc
51 Belamose Ave
203-659-3063

FL Miami
L M Ericsson Telecommunications Inc
1450 N W 159th St
305-621-5555

MD Baltimore
L M Ericsson Telecommunications Inc
4700 Belle Grove Rd
301-636-0050

MA Framingham
L M Ericsson Telecommunications Inc
480 Cochituate Rd
617-620-0220

NY Woodsipe
L M Ericsson Telecommunications Inc
72-35 51st Ave
212-898-5600

PA King of Prussia
L M Ericsson Telecommunications Inc
771 Fifth Ave
215-337-0540

LNR COMMUNICATIONS INC
180 Marcus Blvd
Hauppauge, NY 11787
516-273-7111
Contact: F Kelly
■ Products & Services
Earth stations
Modems, broadband group (to 50 kb/s)
Error rate detectors
Branch Sales Offices:
AZ Scottsdale
Fazer Technical Sales
11421 North 66th St
602-948-4404

CA Mountainview
Microwave Marketing Assoc
2680 Bayshore Frontage Rd
415-969-3355

LOCAL DATA
2701 Toledo St
Torrance, CA 90503
213-320-7126
Advertising page 156
Contact: Dave Hill
■ Products & Services
Modem sharing units
Port sharing units
Parallel line extenders
Batch terminals
Remote job entry terminals
Code converters
Protocol converters
Branch Sales Offices:
CA San Jose
PBC Associates
1926 Quebec Way
408-377-7001

CA Los Angeles
Mark Associates
8921 S Sepulveda Blvd #209
213-641-1840

KS Shawnee
Atech
11201 W 59 Terr
612-944-2097

MA Wellesley
Datamart
180 Linden St
617-235-5520

MN Eden Prairie
First Rep Company
6420 Flying Cloud Dr #207
612-944-2097

NJ Cherry Hill
McGargel Himmelstein Assoc
301 Ave of Commerce;2428 Route 38
609-779-0200

NY Palisades Park
Datanet
120 W Palisades Blvd
201-592-6750

OH Dayton
Swenson Associates
204 Nationwide Bldg;5250 Far Hills Ave
513-435-2772

VA Falls Church
DCS
252 N Washington St
703-241-7803

WA Bellevue
DPM
15935 NE 8th St
206-747-3309

WI Menomonee Falls
Apex Systems
N 81 W 12920 Leon Rd
414-251-4142

LOGICA INC.
666 Third Ave
New York, NY 10017
212-599-0828
Contact: Ken Abbott
■ Products & Services
Local networks
Applications packages
Custom programs
Local network software

LOGICAL MACHINE CORPORATION
1294 Hammerwood Ave
Sunnyvale, CA 94086
408-744-1290
Contact: R L Newsome
■ Products & Services
DDP systems
Local networks

Microcomputer/ microprocessor systems
Minicomputers
Word processors, communicating
Maintenance organizations

LORAIN PRODUCTS COPRORATION
1122 F St
Lorain, OH 44052
216-288-1122
Contact: Carl Berg
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Maintenance organizations
Branch Sales Offices:
CA Mountain View
DSM
2564 Fairbrook Dr
415-968-0542
IL Chicago
DSM
245 Roosevelt Rd
312-231-5775
NE Omaha
DSM
14727 Arbor St
402-330-2754
NV Las Vegas
DSM
3025 La Canada
702-733-0936
NH Merrimack
DSM
Box 1137
603-429-0935
NC High Point
DSM
3436 Imperial Dr
919-869-3436
PA Philadelphia
DSM
1633 Conlyn St
215-276-8282
TN Gallatin
DSM
254 Hickory Harbor Dr
615-244-2800
TX Arlington
DSM
722 N Great SW Pkwy
817-640-1134

LORAL MICROWAVE COMMUNICATIONS—TERRACOM
9020 Balboa Ave
San Diego, CA 92123
714-278-4100
Contact: John Wheatley
■ Products & Services
Multiplexers, time division
Earth stations
Microwave/laser systems
Local networks

LUNDY ELECTRONICS & SYSTEMS INC
One Robert Ln
Glen Head, NY 11545
516-671-9000
Contact: Donald Casadonte
■ Products & Services
DDP systems
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
CA El Monte
Lundy Electronics & Systems Inc
9080 Telstar Ave
213-571-6607
FL Pompano Beach
Lundy Electronics & Systems Inc
3901 NE 12 Ave
305-943-1500
GA Atlanta
Lundy Electronics & Systems Inc
2936M N Druid Hils Rd NE
404-296-7777
IL Chicago
Lundy Electronics & Systems Inc
222 W Adams St
312-726-3103
NY New York
Lundy Electronics & Systems Inc
76 Beaver St
212-943-2921
NC Charlotte
Lundy Electronics & Systems Inc
Wilkinson Blvd
704-394-1161
PA Lafayette Hills
Lundy Electronics & Systems Inc
4 Cypress Pl
215-735-4477
TX Houston
Lundy Electronics & Systems Inc
Box 61291
713-521-0818
VA Springfield
Lundy Electronics & Systems Inc
8001 Forbes Pl
703-321-7650
ENGLAND
Portsmouth
Lundy Electronics & Systems Inc
Ordnance Row
0705-28866

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

LYNN ELECTRONICS CORP
915 Pennsylvania Blvd
Feasterville, PA 19047
215-677-6700
Contact: Don Giacomarra
■ Products & Services
Cables, electrical prefabricated extending
Data jacks and plugs
Branch Sales Offices:
CO Denver
L & S Sales
Box 27007
303-989-0722
FL Norcross
ACS
2979-C Pacific Dr
404-971-4251
IL Lombard
RMP/McBride Corp
67A Eisenhower La S
312-932-9090
LA Kenner
EDS Assoc
3118 Colorado Ave
504-466-7475
MO St Charles
Buckman Assoc
Box 1082
314-946-6201
NH Manchester
Langelier
170 Bridge St
603-669-4119
NJ Livingston
Accurate Wire & Cable Co
65 Edgemere Rd
201-533-0103
PA King of Prussia
Monteiro Assoc Inc
Box 535
215-265-0634
PA Ambridge
R R Meinert Co
508 Merchant St
412-266-8050
RI Slatersville
Norman J Langelier Co
1433 Victory Hwy
401-766-3811
WA Auburn
Norcom Agency
Box 1072
206-852-5510
PUERTO RICO
Caparra Heights
G & G Telecom
Box 11216
809-724-5281
ISRAEL
Hod Hasharon
Rosenfeld-Massafi Co Ltd
Box 42
972-052-09578

MACROLINK
1150 E Stanford Ct
Anaheim, CA 92805
714-634-8080
Contact: Bill Goodale
■ Products & Services
Add-on main memory
Cartridge drives
Disk drives, large
Tape drives, magnetic
Branch Sales Offices:
CA Sunnyvale
DIO Associates
1187 Tasman Dr
408-734-9424
MD Landover
Data Systems Marketing
8401 Corporate Dr
301-577-3700
MA Action
R D Stout Assoc
75 Great Rd
617-263-1128
OH Dayton
E V Swenson Assoc
5250 Far Hills Ave
513-435-2772
TX Dallas
SCI Sales Inc
16990 Dallas Pkwy
214-931-1487
TX Houston
SCI Sales Inc
1199 Nasa RD 1
713-488-3728

MADZAR CORP
37490 Glenmoor Dr
Fremont, CA 94536
415-794-7400
Contact: S Edmund Johnson
■ Products & Services
Modems, limited distance
Branch Sales Offices:
AZ Tempe
J F Hurlbut Co
1000 E Apache Blvd
602-968-5962

CA Orange
Marketing Services Company
201 South Anita St
714-978-0721

CA Mt View
Thorsen West
625 Ellis St
415-964-9300

CA Oakland
Devenuta & Associates
267 Fourth St
415-835-1675

CO Golden
J F Hurlbut Co
622 Gardena Ct
303-279-7796

CT Manchester
Victor Electronics Corp
Box 568
203-646-6448

IL Chicago
Electro-Tech Marketing Assoc
3525 West Peterson Ave
312-588-4535

MD Wheaton
T E Corporation
2401 Blueridge Ave
301-496-8300

MA Southboro
Victor Electronics Corp
304 Turnpike Rd
617-481-4010

MN Edina
Integrated Peripheral Systems Inc
4901 W 77th St
612-831-0349

NM Las Cruces
Sota Rep Ltd
323 First National Tower
505-523-4480

OR Beaverton
ES/Chase Company Inc
4095 SW 144th
503-641-4111

PA Glenside
Wyncote Instrumentation
2689 Limekiln Pike
215-576-5505

PA Harrisburg
Wyncote Instrumentation
5076 Pajobon Dr
215-561-0222

TX Dallas
J Clay Company
2619 Electronic Ln
214-350-1281

TX Alief
J Clay Company
Box 656
713-995-5394

UT Salt Lake City
J F Hurlbut Co
3616 W 2100 So
801-973-4443

WA Seattle
ES/Chase Company Inc
5950 6th Ave South
206-453-0765

MAGNUSON SYSTEMS CORP
2902 Orchard Parkway
San Jose, CA 94303
408-946-8100
Contact: Bruce Moore
■ Products & Services
Concentrators
Front-end processors
Packet processors

Branch Sales Offices:

AZ Scottsdale
Magnuson Computer Systems
5021 East Pershing

CA Los Angeles
Magnuson Computer Systems
201 S Figueroa St

CA San Jose
Magnuson Computer Systems
4000 Moorpark Ave

CA Newport Beach
Magnuson Computer Systems
1100 Quail St

CA San Francisco
Magnuson Computer Systems
55 New Montgomery St

CO Englewood
Magnuson Computer Systems
7000 East Belleview Ave

CT Westport
Magnuson Computer Systems
Connecticut Office Building;21 Charles St

CT Hartford
Magnuson Computer Systems
266 Pearl St

GA Atlanta
Magnuson Computer Systems
5500 Interstate North Pkwy

IL Schiller Park
Magnuson Computer Systems
9950 West Lawrence St

MD Baltimore
Magnuson Computer Systems
1123 North Eutaw St

MA Manchester-by-the-Sea
Magnuson Computer Systems
23 Beach St-Harbour Pl;Box 1530

MI Southfield
Magnuson Computer Systems
17117 West Nine Mile Rd

NJ East Brunswick
Magnuson Computer Systems
760 Highway 18

NY New York
Magnuson Computer Systems
52 Vanderbilt Ave

NC Greensboro
Magnuson Computer Systems
2303 West Meadowview Rd

OH Columbus
Magnuson Computer Systems
6172 Busch Blvd

PA Blue Bell
Magnuson Computer Systems
Whitpain Office Campus;1730 Walton Rd, Box 357

PA Pittsburgh
Magnuson Computer Systems c/o ISI
341 Fourth Ave

TX Houston
Magnuson Computer Systems
10700 Northwest Frwy

TX Austin
Magnuson Computer Systems
3636 Executive Center Dr

TX Dallas
Magnuson Computer Systems
8700 Stemmons Frwy

VA Falls Church
Magnuson Computer Systems
7700 Leesburg Pike

VA Richmond
Magnuson Computer Systems
1501 Santa Rosa Rd

WA Seattle
Magnuson Computer Systems
1208 Westlake Ave N

MANAGEMENT INFORMATION CORP
140 Barclay Center
Cherry Hill, NJ 08034
609-428-1020
Contact: Carol Bell
■ Products & Services
Data communications consultants
Educational services

MANAGEMENT SCIENCE AMERICA INC
3445 Peachtree Rd NE
Atlanta, GA 30326
404-262-2376
Contact: Robert Carpenter
■ Products & Services
Applications packages

Branch Sales Offices:

CA Santa Monica
MSA Inc
1299 Ocean Ave
213-394-8314

CA Burlingame
MSA Inc
One Bay Plaza
415-348-0695

DC Alexandria
MSA Inc
300 Lee St
703-836-3959

GA Atlanta
MSA Inc
3445 Peachtree Rd NE
404-262-2376

GA Atlanta
MSA Inc
57 Executive Park South NE
404-325-7900

IL Oak Brook
MSA Inc
2905 Butterfield Rd
312-986-2450

MA Boston
MSA Inc
50 Staniford St
617-227-3626

MN Minneapolis
MSA Inc
5275 Edina Industrial Blvd
612-835-3801

NJ Fort Lee
MSA Inc
Fort Lee Executive Park
201-592-6444

OH Worthington
MSA Inc
250 E Wilson Bridge Rd
614-436-2280

PA Fort Washington
MSA Inc
455 Pennsylvania Ave
215-643-5276

TX Dallas
MSA Inc
2964 LBJ Frwy
214-243-2924

TX Houston
MSA Inc
5005 Mitchelldale
713-688-8111

WA Seattle
MSA Inc
11040 Main St
206-453-0499

ALBERTA, CANADA
Calgary
MSA Inc
808 4th Ave SW

ONTARIO, CANADA
Toronto
Toronto District Office
Box 144;N Tower Royal Bank Plaza
416-865-0683

QUEBEC, CANADA
St Laurent
Montreal District Office
100 Alexis Nihon Blvd
514-747-4716

AUSTRALIA
North Sydney
MSA (Australia) Pty Ltd
100 Miller St
61-2-929-0711

BELGIUM
1170 Brussells
MSA International Inc
Chaussee de la Hulpe

ENGLAND
Maidenhead
MSA Ltd
99 King St
44-628-71011

SOUTH AFRICA
Johannesburg
MSA International Inc
Rouxville 2192
27-11-45-2215-6-7

MANNESMANN TALLY
8301 S 180th St
Kent, WA 98031
206-251-5552
Contact: W David Del Valle
■ Products & Services
Bar code readers
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)

Branch Sales Offices:
WA Kent
Mannesmann Tally Corp
8301 S 180th St
206-251-6730

MANUFACTURING DATA SYSTEMS INC
4251 Plymouth Rd
Ann Arbor, MI 48106
313-995-6000
Contact: John C Hall
■ Products & Services
Minicomputers
Data entry terminals
Digital plotters
Graphic display terminals
Timesharing/service bureaus

Branch Sales Offices:
CA Newport Beach
MDSI
4000 MacArthur Blvd
714-752-5144

IL Rosemont
MDSI
9501 W Devon Ave
312-823-9810

PA King of Prussia
MDSI
166 Allendale Rd
215-337-9766

MASTER SPECIALTIES CO
1640 Monrovia Ave
Costa Mesa, CA 92627
714-642-2427
Contact: Kenneth T Renaud
■ Products & Services
Telephone companies
Digitized-voice processors
Audio response units
Automatic answering units
Voice adapters

Branch Sales Offices:
AL Huntsville
Brandel-Stephens
Box 4131
205-883-0445

CA Costa Mesa
MSC
1640 Monrovia Av
714-642-2427

FL Orlando
Brandel-Stephens & Co
749 N Garland Ave
305-425-3202

FL Deerfield Beach
Brandel-Stephens & Co Inc
600 S Federal Hwy
305-427-8558

GA Atlanta
Brandel-Stephens & Co
3110 Maple Dr
404-261-7579

IL Downer Grove
Splon Assoc
5120 Belmont Rd
312-963-7011

IA Cedar Rapids
Seltec Sales Corp
1930 S Andrews Dr NE
319-393-1114

KS Overland Pk
KEBCO Inc
7070 W 170th
913-649-1051

MD Maryland Hts
Kebco Inc
75 Worthington Dr
314-576-4111

MD Lutherville
Walker-Houck Assoc
1205 Oakcroft Dr
301-296-6021

MA Andover
Richard Purinton Inc
28 Park St
617-475-7055

MI Mentor
O-M Sales Inc
6101 Andrews Rd
216-257-5244

MN Eden Prairie
Peterson & Wolff
6440 Flying Cloud Dr
612-941-5400

NY Jericho
Electro-Rep
366 N Broadway
516-938-0540

NY Pittsford
Noeth-Honsinger
Box 305
716-586-9002

NC Greensboro
Brandel-Stephens
1400 Battleground
919-274-6952

OH Mentor
O-M Sales Inc
6101 Andrew Rd
216-257-5244

PA Newtown Square
MSC
11 St Albans Cir
215-356-1050

PA Huntingdon Valley
Inacker Sales
One Fairway Plaza
215-947-5660

ONTARIO, CANADA
Willowdale
Avotronics Ltd
200 Consumers Rd
416-493-9711

NETHERLANDS
Zaandamm, 1500 AD
MSC
Box 1185, Havensbraat 8A
075-169744

MATH ASSOCIATES INC
6 Manhasset Ave
Port Washington, NY 11050
516-944-7050
Contact: Martin Rein
■ Products & Services
Lightwave (fiber optic) systems
Cables, lightwave (optical fiber)

MAXELL CORPORATION OF AMERICA
60 Oxford Dr
Moonachie, NJ 07074
201-440-8020
Contact: Al Lustig
■ Products & Services
Cassettes
Disks, floppy

Branch Sales Offices:
CA Los Gatos
Maxell Corp
236 Santa Cruz Ave
408-395-1998

MAXI-SWITCH CO
9697 E River Rd
Minneapolis, MN 55433
612-755-7660
Contact: Don Powellek
■ Products & Services
Terminal interfaces
Switches, data communications: manual

Branch Sales Offices:
CA Burlingame
Wm J Purdy Co
770 Air Port Rd
415-347-2353

CA Woodland Hills
Porter Co
6311 F Desota Ave
213-999-0171

CO Commerce City
Williams Assoc
4900 Monaco Pkwy
303-289-5647

FL Pompano Beach
V G Sales Co Inc
2500 NW 16 Ln
305-971-0900

IL Bensenville
Control Sales
358 Country Club Dr
312-595-2110

MA Chelmsford
Marty Flynn Assoc
190 Hunt Rd
617-256-6229

MI Grand Rapids
R P Urban & Assoc
1119 Burton St
616-245-0511

MN Bloomington
Quantum Sales
10800 Normandale Blvd
612-884-4700
NY Penfield
John Blair
15 Stone Island
716-586-1419
NC Cary
Montgomery Mktg
1391 N Harrison Ave
919-467-6319
OH Brecksville
Allen Nace Co Inc
7601 Parkview Rd
216-526-4323
PA Huntingdon
Omega Electronic Sales Inc
1 Fairway Plaza
215-947-4135
TX Dallas
West & Assoc Inc
4300 Alpha Rd
214-661-9400
WA Seattle
Wm J Purdy Co
815 W Ewing
206-284-8020

MDS/QANTEL
4142 Point Eden Way
Hayward, CA 94545
415-887-7777

MDS/TRIVEX
3180 Red Hill Ave
Costa Mesa, CA 92626
714-546-7781
Contact: C H Simmons
■ Products & Services
Interactive terminals
Remote line printers
Terminal controllers
Video data terminals (KSR)
Branch Sales Offices:
CA Costa Mesa
MDS Trivex
3180 Red Hill Av
714-546-7781
CA San Francisco
MDS Trivex
2333 Anza
415-386-6344
CA Santa Ana
MDS Trivex
1815 S Ritchey St
714-972-2778
FL Miami
MDS Trivex
8400 NW 52nd St
305-592-8410
GA Atlanta
MDS Trivex
2917 Flowers Rd S
404-451-5185
IL Oak Brook
MDS Trivex
1302 W 22 St
312-325-8108
MD Baltimore
MDS Trivex
7000 Security Blvd
301-298-3890
MA Westboro
MDS Trivex
69 Adams St
617-366-5115
MI Southfield
MDS Trivex
4000 Town Center
313-352-5130
MI Southfield
MDS Trivex
4000 Town Center
313-352-5130
MO St Louis
MDS Trivex
12300 Olive St
314-878-3340
NJ Totowa
MDS Trivex
265B Route #46
201-785-3315
NY New York
MDS Trivex
251 E 32nd St
212-532-4406
OH Cincinnati
MDS Trivex
11315 Reed Hartman Hwy
513-984-1063
PA Pittsburgh
MDS Trivex
1910 Cochran Rd;Manor Oak 1, #200
412-561-8282
PA Trevose
MDS Trivex
Kor-Center A, Neshaminy Interplex
215-245-4455
TX Dallas
MDS Trivex
2619 Electronic Lane #206
214-358-5391
VA Vienna
MDS Trivex
8300 Old Courthouse Rd
703-734-3201

MEGATEK
3931 Sorrento Valley Blvd
San Diego, CA 92121
714-455-5590
Contact: Hub Knittle
■ Products & Services
Graphic display terminals
Interactive terminals

MEMODYNE CORP
220 Reservoir St
Needham Heights, MA 02194
617-444-7000
Contact: N H Renaud
■ Products & Services
Data content monitors
Cassettes
Cassette drives
Teleprinters
Branch Sales Offices:
AL Huntsville
Col-Ins Co
800-327-6600
AL Huntsville
Magaro & Assoc
205-882-0827
AZ Tempe
J F Hurlbut
602-968-5962
CA Los Angeles
Western Scientific
213-628-8023
CA Orange
Western Scientific
714-634-8593
CO Golden
J F Hurlbut
303-279-7796
GA Atlanta
Magaro & Assoc
404-252-6609
HI Honolulu
Aloha Associates
808-941-1574
IL Elmhurst
Scott Assoc
312-279-5681
KS Shawnee Mission
Midtec Assoc
913-441-6565
MD Linthicum Heights
K D Assoc
301-636-1151
MA Braintree
Burton Forrester Assoc
617-848-7234
MI South Lyons
Infinity
313-437-2705
MO Florissant
Midtec Assoc
314-837-5200
NY Elmont
Crane & Egert Corp
516-488-2100
NY Clark Mills
KLM/Garner
315-853-6126
NY Syracuse
KLM/Garner
315-458-6214
NY Pittsford
KLM/Garner
716-381-8350
NC Greensboro
Magaro & Assoc
919-294-4783
OH Cleveland
Geotronix
216-526-2535
OH Columbus
Geotronix
614-457-8472
OR Portland
Topp Engr Sales corp
503-244-7265
TX Houston
Acudata Inc
713-488-8195
TX Dallas
Acudata Inc
214-386-5231
WA Bellevue
Topp Engr Sales Corp
206-747-5400
BRITISH COLUMBIA, CANADA
Vancouver
Canadian Dynamics Nova Ltd
604-324-3116
ONTARIO, CANADA
Toronto
Vitel Electronics
416-622-6300
ONTARIO, CANADA
Rexdale
Vitel Electronics
416-245-8528
QUEBEC, CANADA
St Laurent
Vitel Electronics
514-331-7393

MEMOREX CORP COMMUNICATIONS GROUP
18922 Forge Dr
Cupertino, CA 95014
408-996-9000
Contact: Rich McCraney
■ Products & Services
Concentrators
Front-end processors
Add-on main memory

Cartridges
Cassettes
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Data entry terminals
Interactive terminals
Remote line printers
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Teleprocessing monitors
Cables, electrical prefabricated extending
Computer/communications interfaces
Switches, data communications: manual
Lease and resale organizations
Maintenance organizations

Branch Sales Offices:

AL Birmingham
120 Office Park Dr
205-870-4246

AZ Phoenix
5310 N Seventh St
602-274-9802

AR Little Rock
1515 West
501-374-0279

CA Culver City
5601 Slairson Ave
213-473-0811

CA San Diego
8334 Clairemont Mesa Blvd
714-571-1133

CA San Francisco
185 Berry St
415-777-3822

CO Denver
789 Sherman
303-837-0205

CT Old Greenwich
1445 E Putnam Ave
203-637-5241

CT East Hartford
111 Founders Plaza
203-568-1370

DC Mclean
8200 Greensboro Dr
703-821-3300

FL Jacksonville
4040 Woodcock Rd
904-398-4440

FL Hialeah
1840 W 49 St
305-558-9320

GA Atlanta
50 Executive Park Dr NE
404-321-0200

IL Lombard
335 Eisenhower La S
312-620-3200

IL Peoria
2524 W Farrelly Ave
309-688-2406

IN Indianapolis
6214 Morenci Trail
317-293-8055

KS Mission
5700 Broadmoor
913-362-1650

KY Louisville
9112 Leesgate Rd
502-425-8397

MD Hunt Valley
Executive Plaza II
301-666-8800

MA Waltham
300 Bear Hill Rd
617-890-0700

MI Southfield
24681 Northwestern Hwy 24
313-354-4511

MO St Louis
12115 Lackland Rd
314-576-4570

NE Omaha
Plaza of Americas 7171 Merry Rd
402-391-0486

NJ West Orange
59 Main St
201-325-0164

NY Albany
One Park Pl
518-458-7099

NY Williamsville
5500 Main St
716-631-5410

NY New York
1700 Broadway
212-541-7780

NC Charlotte
2 Woodlawn Green
704-527-4923

NC Greensboro
3409 W Wendover Ave
919-294-4374

OH Cincinnati
644 Linn St
513-621-7120

OH Columbus
1395 E Dublin-Grandville Rd
614-885-0415

OK Oklahoma City
420 NW 13
405-235-1245

OK Tulsa
9810 E 42 St
918-622-6743

OR Portland
7100 SW Hampton St
503-620-4800

PA King of Prussia
741 5th Ave
215-337-1050

PA Pittsburgh
Manor Oak Two 1910 Cochran Rd
412-531-8711

RI Providence
933A Waterman
401-728-1860

SC Greenville
25 Woodslake Rd
803-232-8217

TX Irving
1621 Walnut Hill
214-258-3510

TX Houston
5151 Mitchelldale Bl
713-688-1451

VA Richmond
6620 W Broad St
804-288-3116

WA Renton
451 Tenth St
206-228-0380

WI Milwaukee
10201 W Lincoln Ave
414-327-4040

WI Eau Claire
1414 West Hamilton
715-834-9261

MEMOREX MEDIA PRODUCTS GROUP
1200 Memorex Dr
Santa Clara, CA 95052
408-987-2296
Contact: Mark C Klein
■ Products & Services
Disks, floppy
Disk packs
Tape, magnetic

Branch Sales Offices:

GA Atlanta
Memorex Media Product Group
50 Executive Park South NE
404-321-0200

IL Lombard
Memorex Media Product Group
335 Eisenhower Ln S
312-620-3200

NY New York
Memorex Media Product Group
1700 Broadway
212-541-7780

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

MEPCOM INTERNATIONAL
15181 Business Ave
Dallas, TX 75234
214-484-0640
Contact: R D Moore
■ Products & Services
Front-end processors
Line sharing units
Message switchers
Modem sharing units
Port selectors
Port sharing units
Remote network processors
Modems, voice-grade, low-speed (0-1,200 b/s)
Data content monitors
Local networks
Local network interfaces
Floppy disk recorders
Badge readers
Bar code readers
Data entry terminals
Interactive terminals
Point of sale terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Terminal controllers
Terminal interfaces
Applications packages
Code/protocol conversion programs
Custom programs
Automatic answering units
Automatic calling units
Code converters
Computer/communications interfaces
Data compression devices
Data security devices: encoder/decoders
Data security devices: personal identification systems
Fire detection/protection equipment

MFE CORP
Keewaydin Dr
Salem, NH 03079
603-893-1921
Contact: P D Ellis
■ Products & Services
Cassettes
Cassette drives

Disk drives, floppy
Tape, magnetic
Word recognition units
Automatic answering units

Branch Sales Offices:

AL Atlanta
Reynolds & Assoc
5057 Vernon Springs Dr
404-393-9113

AK Anchorage
Harry J Lang & Assoc
1406 W 47 Av
908-279-5741

AZ Tempe
Qualtech Inc
610 W Broadway
602-967-4655

AR Dallas
The Thorson Co
4445 Alpha Rd
214-233-5744

CA Los Angeles
The Thorson Co
520 So Sepulveda Blvd
213-476-1241

CA Mountain View
The Thorson Co
625 Ellis St
415-964-9300

CA Irvine
The Thorson Co
17775 Main St
714-557-4460

CA Goleta
The Thorson Co
340 So Kellogg Av
805-964-8751

CA San Diego
The Thorson Co
7841 Balboa Av
714-292-8525

CO Evergreen
Westek Data Products Inc
25921 Fern Gulch
303-674-5255

CO Boulder
Westek Data Products Inc
1322 Arapahoe Rd
303-449-2620

CT Natick
Andruss-Peskin Corp
Box 268
617-653-3919

DE Hatboro
QED Electronics
300 N York Rd
215-674-9600

FL Ft Lauderdale
Reynolds & Assoc Inc
161 SW 75 Ave
305-581-6611

FL Satellite Beach
Reynolds & Assoc Inc
476 N A1A #1
305-773-4700

FL St Petersburg
Reynolds & Assoc Inc
11405 8 St E
813-360-1484

GA Atlanta
Reynolds & Assoc Inc
5057 Vernon Springs Dr
404-393-9113

HI Honolulu
Aloha Associates
1919 Hunnewell St
808-942-1574

HI Honolulu
Aloha Assoc
Century Commercial Ctr;1750
Kalakaua Ave
808-941-1574

MD Annapolis
Bartek Associates
613 E Bayview
301-261-2987

MA Natick
Andruss-Peskin Corp
Box 268
617-653-3919

NM Albuquerque
Qualtech Inc
310 Louisiana NE
505-255-6100

NY Buffalo
H C Johnson Agencies
5900 Main St
716-632-7880

NY Albany
H C Johnson Agencies
105 Wolf Rd
518-459-1239

NY Fayetteville
H C Johnson Agencies
Box 215
315-637-9383

NY Rochester
H C Johnson Agencies
875-Atlantic Av
716-482-3000

NY Buffalo
H C Johnson Agencies Inc
5900 Main St
716-632-7880

NC Winston Salem
Reynolds & Assoc Inc
614 First Union Bldg
919-725-6196

OR Portland
The Thorson Co
7000 SW Hampton St
503-620-5800

PA Hatboro
QED Electronics
300 N York Rd
215-674-9600

TX Dallas
The Thorson Co
4445 Alpha Rd
214-233-5744

TX Houston
The Thorson Co
6633 Hillcroft
713-771-3504

TX Austin
The Thorson Co SW
300 E Huntland Dr
512-451-7527

WA Bellevue
The Thorson Co
One Lake Bellevue Dr
206-455-9180

ONTARIO, CANADA
Etobicoke ON
RFQ Ltd
385 The West Mall
416-626-1445

ONTARIO, CANADA
Ottawa ON
Louis Albert Assoc
2264 Stevenage Dr
613-727-5941

ONTARIO, CANADA
Mississauga ON
Louis Albert Assoc
6205 Airport Rd
416-677-5888

QUEBEC, CANADA
Quebec
RFQ Ltd
Dollard Des Ormeaux
514-694-5724

SWITZERLAND
Vevey
MFE Products SA
Av du General Guisan 58
021-52-80-40

MICOM-BORER LTD
15 Cradock Rd
Reading, Berks R920JT,
England
0734 866801
Contact: Russel J Dopson
■ Products & Services
Line sharing units
Modem sharing units
Multiplexers, frequency division
Multiplexers, time division
Port sharing units
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed
(0-1,200 b/s)
Modems, voice-grade, medium speed
(1,800-3,600 b/s)
Modems, voice-grade, high-speed
(4,800-9,600 b/s)
Electrical-parameters test equipment
Protocol analyzers
Response-time monitors
Network management centers
Selection & transfer equipment: patching
equipment
Switches, data communications: manual
Voice adapters

Branch Sales Offices:

CT West Hartford
Borer Electronics
Box 17-126
203-232-9287

GERMANY, WEST
Pfinztal-Woschbach
Borer Elec GmbH
Schutzenstrasse 8
07240/1620

NETHERLANDS
Simac Electronics BV
Venstraat 20 5503HR Veldhoven

SWITZERLAND
Solothurn
Borer Elec A G
065-31-11-31

MICOM SYSTEMS INC
20151 Nordhoff Ave
Chatsworth, CA 91311
213-998-8844
Advertising pages Cover 3,37,59
Contact: Patrick H Bourgeois
■ Products & Services
Concentrators
Multiplexers, time division
Inverse multiplexers
Multiplexers, statistical (intelligent)
Port selectors
Port sharing units
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, medium speed
(1,800-3,600 b/s)
Modems, voice-grade, high-speed
(4,800-9,600 b/s)
Modem eliminators
RTS emulator
Error controllers

Switches, data communications: automatic
Educational services

Branch Sales Offices:

AL Huntsville
Col-Ins-Co
Box 4028
800-327-6600

AK Anchorage
Transalaska Data Systems
200 Center Ct
907-276-5616

AZ Scottsdale
BFA Corp
4426 Saddlebag Tr
602-994-5400

CA Anaheim
Moxon Electronics
1970 S Santa Cruz St
714-635-7600

CA Lodi
Moxon Electronics
312 W Walnut
209-334-1961

CA Santa Clara
Moxon Electronics
2376 Walsh Rd
408-727-6491

CA San Diego
Moxon Electronics
8388 Vickers St
714-565-1557

CO Denver
BFA Corp
1221 S Clarkson St
303-777-8070

CT Westport
Maguire & Assoc
Box 666
203-226-4281

CT Guilford
R H Sturdy Co
83 Boston Post Rd
203-453-5424

FL Orlando
Col-Ins Co Inc
Box 13189
800-432-4480

FL Coral Springs
Col-Ins-Co
Box C-8827
800-432-4480

GA Atlanta
Col-Ins-Co
Box 559
800-327-6600

IL Rolling Meadows
SEA Inc
1225 Carnegie St
312-255-4820

IN Carmel
SEA Inc
624B So Range Line Rd
317-846-2591

LA Baton Rouge
Col-Ins-Co
11814 Coursey Blvd
800-327-6600

MD Edgewater
Commart Inc
600 Central Ave
301-261-4344

MA Wellesley
Datamart Inc
180 Linden St
617-235-5520

MA Wellesley Hills
R H Sturdy Co
167 Worchester St
617-235-2330

MI Madison Heights
WKM Assoc
345 Girard St
313-588-2300

MN Minneapolis
SEA Inc
7601 N Kentucky Ave
612-425-4455

MO Independence
National Teleprocessing Products
1201 Randal Rd
816-252-3700

MO Clayton
National Teleprocessing Products
230 S Bemiston
314-721-0401

NE Omaha
National Teleprocessing Products
5705 S 152nd Ave
402-895-5850

NH Windham
R H Sturdy Co
8 Birchwood

NJ Cherry Hill
Megargel/Himmelstein Assoc
2428 Rt 38
609-779-0200

NJ Woodbridge
Micom Systems Inc
900 Route 9
201-750-1120

NM Albuquerque
BFA Corp
1704 Moon NE
505-292-1212

NM Las Cruces
B F A Corp
Box 1237
505-524-9693

NY New York
Glasgal Comm
521 5 Ave
212-687-2455

NY Rochester
R G Engineering
3000 Winton Rd S
716-442-5631

NY Loudenville
R G Engineering
47 Wertman Ln
518-459-5891

NC Winston Salem
Col-Ins-Co
Box 11607
800-327-6600

OH Cleveland
WKM Assoc
16141 Puritas Ave
216-267-0445

OH Dayton
WKM Associates
7913 S Suburban
513-434-7500

OR Portland
Rush S Drake Assoc
Box 8009
503-224-3145

PA Pittsburgh
WKM Assoc
90 Clairton Blvd
412-892-2953

SC Greenville
Col-Ins-Co
Box 5091
800-327-6600

TN Nashville
Col-Ins-Co
1804 Linden Ave
800-327-6600

TX Dallas
Data Aids Assoc
2880 LBJ Freeway
214-620-1551

TX Houston
Data Aids Assoc
1440 N Loop
713-862-6685

UT Salt Lake City
BFA Corp
140 W 2100 S
801-466-6522

WA Seattle
Rush S Drake Assoc
11524 NE 15th
206-364-8830

WI Brookfield
SEA Inc
675 N Brookfield Rd
414-784-9379

PUERTO RICO
Santurce
Datamatica Inc
Box 6829 Loiza St Sta
809-723-9689

BRITISH COLUMBIA, CANADA
Vancouver
ATELCO
303-1037 W Broadway
604-734-2012

ONTARIO, CANADA
Scarborough
ATELCO
3400 Pharmacy Ave
416-497-2208

ONTARIO, CANADA
Ottawa
ATELCO
1704 Carling Ave
613-728-3717

QUEBEC, CANADA
Montreal
ATELCO
2545 Boul Cavendish Sut 125
514-481-7733

AUSTRALIA
Croydon
Datacraft Pty Ltd
Box 353
725-5477

CHILE
Santiago
Sonda Ltda
Teations 574
62277

CYPRUS
Nicosia
Datacom Ltd
Box 5293
021-76214

DENMARK
Koge
Trend Electronics
Tangmosevej 99
03-65-23-45

ECUADOR
Quito
Microsistemas
Foch 635 y Reina Victoria
548-521

FINLAND
Helsinki
Heath and Co
Kasoorinkatu 1
144844

FRANCE
Paris
Satelcom International
69-71 Rue Du Chevaleret
584-11-16

GERMANY, WEST
Bad Soden/TS
Telemation GmbH
Bismarckstrasse 8
06196-27054
GREECE
Athens
Elecomp Ltd
224 Syngrou Ave
9514 944
GUAM
Agana
Internat'l Marketing Mgt
Box 20938 GMF
671-646-7280
HONG KONG
Causeway Bay
Datacraft (H K) Ltd
2-20 Paterson St
5-769078
INDONESIA
Singapore
Total Computer Systems
50 Kallang Bahru
2934401
ISRAEL
Haifa
Elbit Computers
Box 5390
03-454975/6
ITALY
Milano
Uniautomation
Via Ronchi, 39
215-7377
JAPAN
Tokyo
ITS-Japan Company Ltd
Chiyoda-Ku
03-262-2355
KOREA REP (REP)
Seoul
Data Comm
112 Neng Chun-Dong
363 4606
MALAYSIA FED OF
Kuala Lumpur
Total Computer Systems
Box 2608
485347/480296
MEXICO
Mexico 17
Transdata
Mar Jonico No 50-B
905-399-6413
NETHERLANDS
The Hague
Koning en Hartman
Elektrotechniek
30 Koperwerf
70-210101
NEW CALEDONIA IS
Noumea
NCR Corporation
65 Ave Marechal Foch
27 56 65
NEW ZEALAND
Wellington
Datacraft Ltd
22 Waione St Petone
687-100
PERU
Lima 13
Digi Comp
Av Republica de Panama
72-7495
SINGAPORE
Singapore
General Engineers Assoc
Pasir Panjang Rd
272 9412

SOUTH AFRICA
Randburg
Grinel Data Systems
Box 50994
011-789-1441
SPAIN
Madrid
Specific Dynamics Iberia
Torrelaguna 61-1
01-403-0362
SWEDEN
Sundyberg
Heath & Co
Lotsjovagen 17-19
08-289480
SWITZERLAND
Geneva
Interep SA
4, Cours Des Bastions
022-208346
TAIWAN
Taipei
Multitech International Corp
977 Min Shen E Rd
769 1225
THAILAND
Bangkok
Utility Electric Co Ltd
55/24-25 Phayathai Rd
251-4243
VENEZUELA
Caracas
Digidata C A
Esquina Calle 5
38 73 57

MICROCOM INC
89 State St, 11th Floor
Boston, MA 02109
617-367-6362
■ Products & Services
Electronic mailboxes
Applications packages
Emulation packages
Local network software

MICROCOMPUTER SYSTEMS CORP
432 Lakeside Drive
Sunnyvale, CA 94086
408-733-4200
Contact: John M Nosek
■ Products & Services
Disk drives, large
Branch Sales Offices:
MA Boston
MSC Boston
50 Staniford St
617-742-7011

MICRODATA CORPORATION
Box 19501 17481 Redhill Ave
Irvine, CA 92713
714-540-6730
Contact: Rene H Caron
■ Products & Services
DDP systems
Local networks
Minicomputers
Database processors
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Word processors, communicating
Applications packages
DDP systems software
Emulation packages
Local network software
Operating systems
Word processing packages

Branch Sales Offices:
CA Los Angeles
Microdata Corporation
261 S Figueroa
213-687-9783
CA Newport Beach
Microdata Corporation
4000 McArthur Blvd
714-851-1222
CA Burlingame
Microdata Corporation
1633 Old Bayshore Hwy
415-697-0430
CA Fresno
San Joaquin Systems Inc
5114 E Clinton Way
209-252-3725
CA Emeryville
The Computer Works
5801 Christie Ave
415-547-6565
CO Englewood
Software Management Systems Inc
84 Inverness Circle East
303-741-3179
DE Wilmington
Truax & Associates Inc
2500 Grubb Rd
302-475-5010
FL Hollywood
Microdata Corporation
2700 N 29th Ave
305-923-6423
FL Miami
Microdata Corporation
8355 NW 53rd St
305-592-0770
GA Atlanta
Microdata Corporation
5901-A Peachtree Dunwoody Rd
404-393-0240
HI Honolulu
Industry Data Services Inc
190 S King St
808-521-8011
IL Oak Brook
Microdata Corporation
2809 Butterfield Rd
312-920-9100
IN Indianapolis
Anacomp Inc
6404 Castleway Ct
317-842-9930
LA Monroe
Interactive Business Systems Inc
1008 North 19th St
318-325-9618
MA Burlington
Northeast Data Systems Inc
20 "A" St
617-273-2920
MI Minneapolis
Microdata Corporation
5353 Wayzata Blvd
612-546-3771
MO St Louis
Microdata Corporation
1864 Craig Rd
314-434-9330
NJ Union
Microdata Corporation
4 Gary Rd
201-688-3070
NY New York
Microdata Corporation
2 Penn Plaza
212-695-6509
NC Raleigh
Distributed Data Systems Inc
5711 Six Forks Rd
919-848-0001

OH Cincinnati
Microdata Corporation
4700 Ashwood Dr
513-984-5036

OH Cleveland
Microdata Corporation
7550 Lucerne Dr
216-234-7318

PA Pittsburgh
Microdata Corporation
Robinson Plaza III
412-787-8360

TN Brentwood
Tennessee Data Systems Inc
Two Maryland Farms
615-373-0035

TX Dallas
Microdata Corporation
4099 McEwen
214-233-8800

TX El Paso
Compusystems Inc
445 Executive Ctr Blvd
915-532-1992

TX Houston
Tidelands Data Products Inc
5625 FM 1960 West
713-440-6111

UT Salt Lake City
Management Systems Corporation
200 E South Temple
801-524-8000

VA Alexandria
Datatel Inc
3700 Mt Vernon Ave
703-549-4300

WA Bellevue
Escom Inc
12838 SE 40th Pl
206-641-4990

PUERTO RICO
Ponce
Minicomp Systems
43 Concordia St
809-844-3020

MICRO PERIPHERALS INC
9754 Deering Ave
Chatsworth, CA 91311
213-709-4202
Contact: Keith Murphy
■ Products & Services
Disk drives, floppy
Disks, floppy
Disk drives, large
Branch Sales Offices:
FRANCE
Asurieres
Metrologie
La Tour d' Asurieres; 4 Avenue Laurent Cely
791444
GERMANY, WEST
Munich
Datamega
Hermann Oberth Strasse 7, Putzbrunn
089-460-4993
JAPAN
Yokohama
ALPS Electric Co Ltd
1767 Nippa-Cho Kohoku-Ku

MICROPOLIS CORP
21329 Nordhoff St
Chatsworth, CA 91311
213-709-3300
Contact: James Molenda
Branch Sales Offices:
AL Huntsville
Pen-Tech Assoc
3322 Memorial Pkwy SW
205-881-9298

AK Redmond
Quadra Sales Corp
2651 151st Pl NE
206-883-3550

CA Sunnyvale
Group III Electronics
542 Lakeside Dr
408-245-4392

CA Redondo Beach
Group III Electronics
2615 Manhattan Beach Blvd
213-973-7844

CA San Diego
Group III Electronics
7263 Engineer Rd
714-292-0525

DE Manchester
EMC Corp
48 Purnell Pl
203-646-8085

FL Casselberry
Pen-Tech Assoc
1398 Shemoran Blvd #106
305-645-3444

FL Deerfield Beach
Pen-Tech Assoc
201 SE 15 Ter
305-421-4989

GA Marietta
Pen-Tech Assoc
627 Cherokee St
404-424-1931

IN Indianapolis
Carter, McCormic & Peirce
1717 E 116th St
317-844-4175

MD Rockville
Electronic Marketing Assoc
11716 Parklawn Dr
301-881-5300

MA Newton
EMC
385 Elliot St
617-244-4740

MI Farmington Hills
Carter-McCormic & Peirce Inc
23995 Freeway Park Dr
313-477-7700

MO St Louis
Engineering Services Co
8420 Delmar Blvd
314-997-1515

NY Great Neck
Harvey J Krasher Assoc
87 Water Mill Ln
516-487-0690

NC High Point
Pen-Tech Assoc
1202 Eastchester Dr
919-883-9125

OH Cleveland
Carter McCormic & Peirce Inc
22650 Lorain Rd
216-779-5100

OH Dayton
Carter McCormic & Peirce Inc
4977 Northcutt Pl
513-222-7700

OK Tulsa
US Data Assoc
Box 33043
918-252-9646

PA Pittsburgh
Carter McCormic & Peirce Inc
409 Beatty Rd
412-372-4415

PA Plymouth Meeting
Electronic Marketing Assoc
649 W Germantown Rd
215-248-5050

TX Dallas
US Data Assoc
14241 Proton Rd
214-661-9633

TX Houston
US Data Assoc
4120A Directors Row
713-681-0200

TX Austin
US Data Assoc
701 Shoal Creek Blvd
512-454-3579

WA Redmond
Quadra Sales Corp
2651 151st Pl NE
206-883-3550

ONTARIO, CANADA
Mississauga
02-41-40-50
2244 Drew Rd
416-676-1042

AUSTRALIA
Rozelle
Ampec Engineering Co Pty Ltd
1 Wellington St
02-818-1166

BELGIUM
Brussels
CN Rood Sa
Place de Jambline de Meux 37
02-3521-35

ENGLAND
Reading
Sintrom Ellinor Ltd
14 Arkwright Rd
0734-85464

FRANCE
Sevres
Tekelec-Airtronic
rue Carle Vernet
1 027-75-35

GERMANY, WEST
Eching
Kontron Elektronic GmbH
Breslauer Str 2
08165/77-1

GREECE
Athens 147
Dynamco Ltd
1 Tosita Str
01-89-31-198

ISRAEL
Haifa
Microcomputer Engineering Ltd
Box 7238
04 89670

ITALY
Milan
Macrtonics SA
Viale Jenner 38/40
6882141-2-3

JAPAN
Chuo-Ku
Shoshin Shoji Kaisha Ltd
Nihonbashi
270-5921

NEW ZEALAND
Aukland
Computer Store
22B Milford Rd
499-458

NORWAY
Oslo 1
Bohn Data
Tollbugt 2
02-41-40-50

SCOTLAND
Reading
Sintrom Ellinor Ltd
14 Arkwright Rd
0734-85464

SINGAPORE
50 Kallang Bahru
Total Computer Systems Pte
20-23F 6th Flr/Block 12

SOUTH AFRICA
Pinegowrie
Radiokom (1969) Pty Ltd
Box 56412
789-400

SWITZERLAND
Zurich
MST Micro-System-Technik AG
Albisrieder Str 226
01-242-1077

MICRO POWER SYSTEM INC.
3100 Alfred St.
Santa Clara, CA 95050
408-727-5350
Contact: Robert Sabo

Branch Sales Offices:

AL Huntsville
R W Mitscher Co Inc
1004 Sharpsburg Dr SE
203-883-0506

AZ Tucson
J J Riley Associates
4651 North 1st Ave
602-888-4627

CA Palo Alto
Nor-Cal Associates
1121 San Antonio Rd
415-961-8121

CA La Mirada
Select Electronics Limited
14871 Branwall St
714-739-8891

CA San Diego
D2 The Rep Company
5575 Magnatron Boulevard
714-292-9001

CO Littleton
Quarta Inc
2275 E Arapahoe Rd
303-795-3187

FL Fort Lauderdale
Dyne-A-Mark
1001 NW 62nd St
305-771-6501

FL Clearwater
Dyne-A-Mark
Box 16117
813-441-4702

FL Maitland
Dyne-A-Mark
Box 33
305-727-0192

FL Altamonte Springs
Dyne-A-Mark
303 E Sermoran Blvd
305-727-0192

GA Lawrenceville
R W Mitscher Co Inc
3417 Stanford Circle
404-923-3239

IN Greenwood
Valentine & Associates
1000 N Madison Ave;Box 242
317-888-2260

IN South Bend
Valentine & Associates
2037 E Ireland Rd;Soutland Plaza
216-291-3863

IA Marion
REP Associates Corp
980 Arica Ave
319-393-0231

KY Louisville
K W Electronic Sales Inc
1930 Bishop Ln
502-451-1860

MD Baltimore
Stemler Associates
6706 Whitestone Rd
301-944-8262

MD Farmington Hills
Lowell Wendt Marketing Co
27650 Farmington Rd
313-553-9800

MA Roselle
John Kennaugh & Associates
701 E Irving Park Rd
312-980-7570

MA Burlington
Dynamic Sales of New England
97 Cambridge St
417-272-5676

MN Minneapolis
Peterson Sales & Associates
9001 Bloomington Frwy
612-884-3483

NJ Cherry Hill
Stemler Associates
Box 1733
609-966-4070

NJ Randolph
Astrorep
19 E Elizabeth

NJ Middletown
Astrorep
78 Crawford Rd

NY West Babylon
Astrorep
300 Sunrise Highway
516-422-2500

NY Pittsford
R W Mitscher Co Inc
5 Greylock Ridge
716-586-4012

NY West Hurley
R W Mitscher Co Inc
22 Pleasant Ridge
914-679-6151

NY Fayetteville
R W Mitscher Co Inc
7273 Dabney Ln
315-637-6561

NY North Syracuse
R W Mitscher Co Inc
606 Forest Dr
315-458-1321

NY Rochester
R W Mitscher Co Inc
419 Mill Rd
714-227-0839

NY Buffalo
R W Mitscher Co Inc
8555 Main St
716-633-7970

NC Raleigh
R W Mitscher Co Inc
3125 Poplarwood Ct
919-876-0160

OH Dayton
K W Electronic Sales Inc
8514 N Main St
513-890-2150

OH Shaker Heights
K W Electronic Sales Inc
3645 Warrensville Center Rd;Shaker Bldg
216-491-9177

OH Worthington
K W Electronic Sales Inc
933 High St
614-888-0483

OK Tulsa
Technical Marketing Inc
9717 R 42nd St
918-622-5984

OR Aloha
Electronic Component Sales
17478 SW Washington Ct
503-245-2342

PA Allison Park
K W Electronic Sales Inc
4485 Williams Flynn Hgwy
412-487-4300

PA Feasterville
Stemler Associates
1002 Richard Ln
215-322-9633

SC Columbia
R W Mitscher Co Inc
512 Menlo Drive;Apt 512
813-772-1907

TN Johnson City
R W Mitscher Co Inc
Box 4105 CRS
615-282-6240

TX Carrollton
Technical Marketing Inc
3320 Wiley Post Rd
214-387-3601

TX Houston
Technical Marketing Inc
6430 Hillcoroft
713-777-9228

TX Austin
Technical Marketing Inc
9027 Northgate Boulevard
512-835-0064

VA Charlottesville
Stemler Associates
Box 7591;2307F Payton Dr
703-548-7818

WA Mercer Island
Electronic Component Sales
911 SE 36th St
206-232-9301

MICRO SWITCH DIV
HONEYWELL INC
11 West Spring St
Freeport, IL 60132
815-235-6600
■ Products & Services
Switches, data communications: automatic
Switches, data communications: manual

Branch Sales Offices:

CA Orange
Micro Switch;A Div of Honeywell
505 S Main St
714-558-7400

CA San Jose
Micro Switch;A Div of Honeywell
2025 Gateway Pl
408-998-3131

CO Englewood
Micro Switch;A Div of Honeywell
5115 S Valley Hwy
303-779-6439

CT Hartford
Micro Switch;A Div of Honeywell
90 Brainard Rd
203-549-3800

GA Atlanta
Micro Switch;A Div of Honeywell
6 W Druid Hills Dr NE
404-321-2565

IL Park Ridge
Micro Switch;A Div of Honeywell
1460 Renaissance Dr
312-296-0710

IA Bettendorf
Micro Switch;A Div of Honeywell
3705 Utica Ridge Rd
319-359-3441

MA Newton
Micro Switch;A Div of Honeywell
70 Wells Ave
617-969-0265

MI Southfield
Micro Switch;A Div of Honeywell
17515 W Nine Mile Rd
313-424-3569

MN Minneapolis
Micro Switch;A Div of Honeywell
7400 Metro Blvd
612-830-3516

MO St Louis
Micro Switch;A Div of Honeywell
2055 Craigshire Dr
314-878-2400

NJ Westfield
Micro Switch;A Div of Honeywell
574 Springfield Ave
201-233-9200

NY Elmsford
Micro Switch;A Div of Honeywell
570 Taxter Rd
914-592-3200

NY Rochester
Micro Switch;A Div of Honeywell
100 Metro Park
716-424-2700

NC Charlotte
Micro Switch;A Div of Honeywell
517 S Sharon Amity Rd
704-364-4770

OH Cleveland
Micro Switch;A Div of Honeywell
1001 E 55 St
216-361-7280

OH Dayton
Micro Switch;A Div of Honeywell
4540 Honeywell Ct
513-237-4075

PA Valley Forge
Micro Switch;A Div of Honeywell
Valley Forge Corp Ctr
215-666-8340

TX Dallas
Micro Switch;A Div of Honeywell
1111 W Mockingbird
214-688-7533

TX Houston
Micro Switch;A Div of Honeywell
8440 Westglen
713-780-6651

WA Bellevue
Micro Switch;A Div of Honeywell
600-108 Ave NE
206-453-7591

WI Brookfield
Micro Switch;A Div of Honeywell
150 N Sunnyslope Rd
414-784-6260

MICRO-TERM INC
1314 Hanley Industrial Ct
St Louis, MO 63144
314-968-8151
Contact: Lee Harris
■ Products & Services
Data entry terminals
Graphic display terminals
Programmable terminals
Point of sale terminals
Video data terminals (RO)

MIDLAND-ROSS
MIDTEX DIV MIDCOM UNIT
1650 Tower Blvd
North Mankato, MN 56001
507-625-6521
Contact: Perry Eimers
■ Products & Services
Power supplies

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

MILLENIUM SYSTEMS
19020 Pruneridge Ave
Cupertino, CA 95014
408-996-9109
Contact: Bill Harding

Branch Sales Offices:

CA Redondo Beach
Ward/Davis Associates
2615 Manhattan Beach Blvd
213-973-7772

CA San Diego
Ward/Davis Associates
7263 Engineer Rd
714-292-1000

CA Santa Clara
Ward/Davis Associates
3329 Kifer Rd
408-245-3700

CO Denver
PAR Associates
10515 E 40th Ave 103
303-371-4140

CT North Haven
Pat Jenks Associates
52 Washington Ave
203-239-6201

FL Ft Lauderdale
Teqspec Inc
4953 N University Dr
305-748-9292

FL Clearwater
Teqspec Inc
3118 Gulf-to-Bay Blvd
813-725-2201

GA Atlanta
Teqspec Inc
119 Administrative Bldg Peach Tree Airport
404-455-7222

IL Elmhurst
Sector Engineering
770 N Church Rd
312-530-7850

IN Indianapolis
Sector Engineering
8463 Castlewood Dr
317-842-1120

KS Wichita
Technical Representatives Inc
360 N Rock Rd
316-681-0242

MD Columbia
Rep-Tron Inc
10632 Little Patuxent Pkwy
301-982-1580/301-995-1433

MA Waltham
W M Hague Co
10 Dale St
617-899-5600

MA Woburn
Pat Jenks Associates
114 Cummings Park
617-938-0488

MI Clarkson
EQS Systems
8583 Andersonville Rd
313-334-6276

MN Hamel
Sector Engineering
6200 Rolling Hills Rd
612-478-6675

MO Earth City
Technical Representatives Inc
502 Earth City Plaza
314-291-0001

MO Kansas City
Technical Representatives Inc
406 W 34th 516
816-756-3575

NJ Cherry Hill
Scientific Representatives Inc
496 N King's Hwy
609-482-0059

NM Albequerque
Syntech
302-C San Pablo SE
505-266-7951

NY Buffalo
Robert F Lamb Co
1865 Kenmore Ave
716-874-4900

NY Rochester
Robert F Lamb Co
4515 Culver Rd
716-544-5580

NY Syracuse
Robert F Lamb Co
160 Pickard Bldg E Molloy Rd
315-455-2469

NY Albany
Robert F Lamb Co
Box 5083
518-869-3355

NY Port Chester
Radiation Electronics
225 Westchester Ave
914-937-2300

NC Winston-Salem
Teqspec Inc
3919 Quilling Rd
919-732-8102

OH Chesterland
EQS Systems
8517 Herrick Dr
216-729-2222

OH Dayton
EQS Systems
Box 24013
513-294-2476

OR Portland
Cascade Data Marketing Inc
14273 NW Science Park Dr
503-641-9266

TX Dallas
Microsystems Marketing Inc
13777 N Central Expwy
214-238-7157

TX Stafford
Microsystems Marketing Inc
10707 Corporate Dr
713-491-6550

TX Austin
Microsystems Marketing Inc
8330 Burnet Rd
512-452-2842

UT Centerville
PAR Associates
1199 S Main St
801-292-8145

WA Woodinville
Cascade Data Marketing Inc
20420 NW 162nd
206-788-6961

WI Milwaukee
Sector Engineering Inc
8705 Port Washington Dr
414-352-8280

ALBERTA, CANADA
Calgary
Allan Crawford Associates
1935 30th Ave NE
403-230-1341

BRITISH COLUMBIA, CANADA
Burnaby
Allan Crawford Associates
3795 William St
604-294-1326

ONTARIO, CANADA
Mississauga
Allan Crawford Associates
6503 Northam Dr
416-678-1500

ONTARIO, CANADA
Ottowa
Allan Crawford Associates
811 Lady Ellen Pl
613-722-7682

NOVA SCOTIA, CANADA
Dartmouth
Allan Crawford Associates
192 Joseph Zatzman Dr
902-463-9360

AUSTRALIA
Auburn
Warburton Franki
199 Parramatta Rd
011-61-2-648-1711

AUSTRALIA
Kidman Park
Warburton Franki
322 Grange Rd
011-61-8-356-7333

AUSTRALIA
Fortitude Valley, Queensland
Warburton Franki
13 Chester St
011-61-7-52-7255

AUSTRALIA
S Melbourne Victoria
Warburton Franki
220 Park St
011-61-3-699-5999

AUSTRALIA
Belmont W
Warburton Franki
98 Belgravia St
011-61-9-277-7000

AUSTRIA
A-1220 Wein
Walter Rekirsch/Elektronische Geraete/Ges MBH & Co KG
Obachgasse 28
23-55-55

BELGIUM
1000 Brussels
Simac Electronics SPRL
Rue Du Progres 52
2-2192453

ENGLAND
Bucks HP 13 6EE
MicroSystem Services
11 Duke St High Wycombe
9494-41661

ENGLAND
Oxfordshire
Millennium Systems Inc
10A Buttermarket Thame
84-421-2633

FRANCE
78530 BUC
MB Electronique
606 Rue Fourny ZI Centre BP 31
956-81-31

GERMANY, WEST
Kreuzbreite 14, D-3062
Spezial Electronic KG
3062 Bueckeburg/Hannover
05722-1011

GERMANY, WEST
D-8000 Muenchen 2
Spezial Electronic KG
Hermann-Lingg-Strasse 16
089-530387

GERMANY, WEST
D-7090 Ellwangen
Spezial Electronic KG
Magdeburger-Strasse 15
07961-4047

ITALY
00143 Roma
Sistrel SPA
Via Guiseppe Armellini 39
06-5915551

ITALY
20092 Cinicello Balsamo
Sistrel SPA
Via Pelizza Da Volpedo 59
02-6181893

ITALY
80126 Napoli
Sistrel SPA
Via Cintia Al Parco S Paolo 35
081-7679700

JAPAN
Tokyo, 103
Iwatsu Electronic Co Ltd
1-3 Nihonbashi 2-Chome Cho Ku
272-0461

JAPAN
Tokyo, 107
AMI Japan
502 Nikko Sanno 2-5-3 Akasaka Bldg
586-8131

NETHERLANDS
5503 HR Veldhoven
Simac Electronics BV
Veenstraat 20
40-533725

NORWAY
Cedar Rapids
Technical Representatives Inc
2510 White Eagle Trail
319-364-8650

NORWAY
N-1371 Asker
Teleinstrument A/S
Blakstadmarka 34 Postboks 134
02-789460

SPAIN
Malaga
Instrumatic Iberica
Alameda Principal 26 Apartado 151
3452213199/3452213898

SWEDEN
Stockholm
Teleinstrument A/B
Maltesholmsvagen 138 Box 490
S-162 04 Vallingby
08380370

SWITZERLAND
1027 Geneva
Instrumatic SA
5-7 Rue Du Clos
022360803

SWITZERLAND
8803 Rueschlikon
Instrumatic SA
Weingartenstr 9
7241410/7241411

TAIWAN
Taipeki 105
Multitech International Corp
977 Min Shin E Rd
0118627691225

TAIWAN
Cupertino, CA
Multitech Electronics Inc
10322A N Stelling Rd
408-252-4212

MITRON SYSTEMS CORP
2000 Century Plaza
Columbia, MD 21044
800-638-9665
Contact: Roger D Marshall
■ Products & Services
Tape drives, magnetic
Batch terminals
Automatic calling units

MODEMS PLUS INC
217 E Trinity; PO Box 1727
Decatur, GA 30031
404-378-5276
Advertising page 36
Contact: H T Thorsen
■ Products & Services
Concentrators
Front-end processors
Line sharing units
Modem sharing units
Data content monitors
Microcomputer/ microprocessor systems
Remote job entry terminals
Teleprinters
Teleprinters, impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Computer/communications interfaces
Error controllers
Protocol converters
Data communications consultants
Branch Sales Offices:
GA Decatur
Modemsplus Inc
217 E Trinity Pl
404-378-5276

MODTECH INC
1958 Helsinki Way
Livermore, CA 94550
415-447-9349
Contact: Donn R Estus
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
Automatic calling units
Cables, electrical prefabricated extending
Data access arrangement devices
Data jacks and plugs
Branch Sales Offices:
CA Fountain Valley
MQI Financial Corp
18381 Bandilier Cir
714-964-4722
CA Mt View
MQI Financial Corp
2615 Miller
415-948-8961
MA Newton Highlands
Butler Assoc Inc
82A Winchester St
617-965-1080

MO Florissant
Selco Inc
525 St Francois
314-837-1211

QUEBEC, CANADA
Lachine Quebec
Electrodesign
1925 52nd Ave
514-636-4836

MODULAR COMPUTER SYSTEMS
1650 W McNab Rd
Fort Lauderdale, FL 33309
305-974-1380
Contact: Loren Warburg
■ Products & Services
Concentrators
Front-end processors
Remote network processors
Line drivers
Minicomputers
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Tape punch/reader, paper
Portable data entry terminals
Teletypewriters
Video data terminals (KSR)
Emulation packages
Local network software
Operating systems
Computer/communications interfaces
Educational services
Maintenance organizations
Branch Sales Offices:
AL Huntsville
Modular Computer Sys
4019 Summerhill Place
205-859-4887
CA El Segundo
Modular Computer Sys
888 N Sepulveda Blvd
213-640-1302
CA San Jose
Modular Computer Sys
3031 Tisch Way
408-247-4152
CO Englewood
Modular Computer Sys
6901 S Yosemite
303-773-6101
CT Farmington
Modular Computer Sys
790 Farmington Ave
203-677-4333
FL Orlando
Modular Computer Sys
7040 Lake Ellenor Dr
305-859-4612
GA Tucker
Modular Computer Sys
1726 Montreal Cir
404-938-9965
IL Elmhurst
Modular Computer Sys
118 Industrial Dr
312-833-5620
MA Lexington
Modular Computer Sys
1050 Waltham St
617-862-2366
MI Southfield
Modular Computer Sys
24901 Northwestern Hwy
313-353-3114
NJ Clark
Modular Computer Sys
727 Raritan Rd
201-574-0660
OH Cincinnati
Modular Computer Sys
11315 Reed Hartman Hwy
513-984-1440
PA Pittsburgh
Modular Computer Sys
2000 Sainte Claire Plaza
412-941-3560
TX Dallas
Modular Computer Sys
2874 LBJ Fwy
214-243-6088
TX Houston
Modular Computer Sys
1100 Nasa Rd One
713-333-3250
VA Fairfax
Modular Computer Sys
10400 Eaton Pl
703-385-2000

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

MODULAR FURNITURE CONCEPTS INC
23960 Madison St
Torrance, CA 90505
213-373-8630
Contact: Charles S Daniels
■ Products & Services
Furniture, cabinets, terminal enclosures

MOHAWK DATA SCIENCES CORP
7 Century Dr
Parsippany, NJ 07054
Contact: James J Byrne
■ Products & Services
Message (including telegraph) carriers
Remote network processors
DDP systems
Minicomputers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Word processors, communicating
Ribbons and supplies for terminals and printers
Maintenance organizations
Branch Sales Offices:
AL Birmingham
Mohawk Data Sciences Corp
90 Bagby Dr
205-945-1847
AL Homewood
Mohawk Data Sciences Corp
90 Bagby Dr
205-945-1847
AZ Phoenix
Mohawk Data Sciences Corp
2721 N Central Ave
602-264-7363
CA Hayward
MDS Pacific/South America Mktg Grp
4142 Point Eden Way
415-887-7777
CA Palo Alto
Mohawk Data Sciences Corp
2464 Embarcadero Way
415-856-1300
CA Los Angeles
Mohawk Data Sciences Corp
6055 E Washington Blvd
213-728-7645
CA Santa Ana
Mohawk Data Sciences Corp
1811 E Garry Ave
714-557-9610
CO Aurora
Mohawk Data Sciences Corp
3131 S Yaugh Way
303-695-6880
CT Wethersfield
Mohawk Data Sciences Corp
30 Jordan La
203-529-8665
CT Stamford
Mohawk Data Sciences Corp
1200 Summer St
203-356-1710
FL Miami
Mohawk Data Sciences Corp
8400 NW 52nd St
305-592-8410
FL Jacksonville
Mohawk Data Sciences Corp
7820 Arlington Expwy
904-721-3421
FL Tampa
Mohawk Data Sciences Corp
219 Mariner Sq
813-877-5771
GA Atlanta
Mohawk Data Sciences Corp
1945 The Exchange
404-952-2391
IL Oak Brook
Mohawk Data Sciences
2803 Butterfield Rd
312-654-8630
IL Des Plaines
Mohawk Data Sciences Corp
2200 E Devon Ave
312-298-2520
IN Indianapolis
Mohawk Data Sciences Corp
2346 S Lynhurst Dr
317-243-7547
IA Des Moines
Mohawk Data Sciences Corp
617 E Second St
515-288-8918
KS Shawnee Mission
Mohawk Data Sciences Corp
6405 Metcalfa Ave
913-262-5488
KY Louisville
Mohawk Data Sciences Corp
Executive Park
502-897-3396
LA New Orleans
Mohawk Data Sciences Corp
7240 Crowder Blvd
504-241-1400
MD Baltimore
Mohawk Data Sciences Corp
7000 Security Blvd
301-298-3888
MA Woburn
Mohawk Data Sciences Corp
300 Unicorn Pk Dr
617-935-5772
MI Southfield
Mohawk Data Sciences Corp
4000 Town Center
313-352-9160
MI Grand Rapids
Mohawk Data Sciences Corp
6115 28 St SE
616-942-9173
MN Bloomington
Mohawk Data Sciences Corp
7851 Metro Pkwy
612-854-1141

MO St Louis
Mohawk Data Sciences Corp
12300 Olive St Rd
314-878-2150

NE Omaha
Mohawk Data Sciences Corp
7101 Mercy Rd
402-392-0690

NJ Springfield
Mohawk Data Sciences Corp
11 Dundar Rd
201-467-9850

NJ Mt Laurel
Mohawk Data Sciences Corp
303 Fellowship Rd
609-234-6400

NY New York
Mohawk Data Sciences Corp
370 Lexington Ave
212-685-7713

NY Albany
Mohawk Data Sciences Corp
Washington Ave Ext
518-546-7411

NY Buffalo
Mohawk Data Sciences Corp
3960 Harlem Rd
716-839-5200

NY Rochester
Mohawk Data Sciences Corp
3255 Brighton Henrietta Town Line Rd
716-442-5720

NY Liverpool
Mohawk Data Sciences Corp
7481 Henry Clay Blvd
315-457-3248

NY New York
Mohawk Data Sciences Corp
50 Broadway
212-422-8070

NC Charlotte
Mohawk Data Sciences Corp
5601 Executive Center Dr
704-535-6450

NC Raleigh
Mohawk Data Sciences Corp
3810 Merton Dr
919-782-4184

OH Cincinnati
Mohawk Data Sciences Corp
11315 Reed Hartman Hwy
513-984-5090

OH Cleveland
Mohawk Data Sciences Corp
5755 Granger Rd
216-398-4700

OH Worthington
Mohawk Data Sciences Corp
6797 No High St
614-888-6527

OK Oklahoma City
Mohawk Data Sciences Corp
4133 NW 23rd St
405-943-7311

OK Tulsa
Mohawk Data Sciences Corp
2651 E 21 St
918-749-1607

PA Pittsburgh
Mohawk Data Sciences Corp
1910 Cochran Rd
412-561-4700

SC W Columbia
Mohawk Data Sciences Corp
1101 Harbor Rd
803-796-1835

TN Nashville
Mohawk Data Sciences Corp
1100 Kermit Dr
615-361-7333

TN Memphis
Mohawk Data Sciences Corp
2500 Mt Moriah Rd
901-795-7575

TX Houston
Mohawk Data Sciences Corp
4141 E Directors Row
713-681-6601

TX Austin
Mohawk Data Sciences Corp
1524 South IH-35
512-441-2221

TX Dallas
Mohawk Data Sciences Corp
2619 Electronic La
214-358-5391

TX San Antonio
Mohawk Data Sciences Corp
8026 Vantage Dr
512-349-8862

UT Salt Lake City
Mohawk Data Sciences Corp
530 Lawndale Dr
801-466-8668

VA Richmond
Mohawk Data Sciences Corp
1604 Santa Rosa Rd
804-285-3467

VA Vienna
Mohawk Data Sciences Corp
8300 Old Courthouse Rd
703-734-3212

WA Bellevue
Mohawk Data Sciences Corp
1715 114 SE
206-455-5995

WI Wauwatosa
Mohawk Data Sciences Corp
9730 W Bluemond Rd
414-258-5620

ONTARIO, CANADA
Markham, Ont
MDS Canada
85 Idema Rd
416-495-6060

BELGIUM
Brussels
MDS Europe/Africa Marketing Group Hdqrts
Rue Ducale 53
02513-4543

BELGIUM
Brussels
MDS Belgium S A
Rue Ducale 67
32-2-512-1646

DENMARK
2730 Herlev
MDS A/S
Dyramovej 11
45-2-94-13-55

ENGLAND
London SW15
MDS Computer Systems (UK) Ltd
84 Upper Richmond Rd
44-1-874-6404

FRANCE
Paris
MDS France SA
197 Rue De Bercy
33-1-345-4045

GERMANY, WEST
Menden
MDS Deutschland Gmbh
Siegburger-Strasse 39
49-2-241-1611

GERMANY, WEST
Cologne
MDS Deutschland GM6H
Oskar-Jager-Strausse 175
49-221-54-10-41

ITALY
Milan
MDS Italia SPA
Via Felice Casati 16
39-6-475-7520

NETHERLANDS
Amsterdam
MDS Nederland NV
Rijnsburgstraat 11
31-20-173-436

NORTHERN IRELAND
Dublin
MDS Limited
30a Olive Mount Rd
353-1-98-45-29

SOUTH AFRICA
Johannesburg
MDS South Africa (Pty) Ltd
87 Juta St
27-11-39-2461/5

SPAIN
Madrid
MDS Spain
Casado del Alisal 10
34-1-468-0995

SWEDEN
Stockholm
MDS Svenska AB
Strandbergagtan 47
46-8-13-04-50

SWITZERLAND
Kloten
MDS Schweiz AG
30 Indusriestrasse
41-1-814-2311

MONOLITHIC SYSTEMS CORP
84 Inverness Circle East
Englewood, CO 80112
303-770-7400
Contact: Mike Hart
■ Products & Services
Microcomputer/ microprocessor systems
Add-on main memory
Add-on auxilliary memory
Computer/communications interfaces

Branch Sales Offices:

CA Sierra Madre
Monolithic Systems Corp
49 S Baldwin
213-351-8717

CO Aurora
Monolithic Systems Corp
2620 So Parker Rd
303-695-8903

IL Schaumburg
Monolithic Systems Corp
999 Plaza Dr
312-843-3405

NJ Princeton
Monolithic Systems Corp
1101-B9 State Rd
609-921-2240

MOORE SYSTEMS/LANDIS & GYR
1730 Technology Dr
San Jose, CA 95110
408-297-9920
Contact: D N Rowswell Jr

Branch Sales Offices:

CA San Jose
J L Chapman
1730 Technology Dr
408-297-9920

IN Lafayette
J R Bush
3601 Sagamore Pkwy N
317-742-1001

OK Tulsa
J D Ricks
10536 East Pine St
918-835-7241

PA E Reading
J J Woods
160 Water St;Muhlenberg
Industrial Mall
215-929-1312

MORINO ASSOCIATES INC
8133 Leesburg Pike
Vienna, VA 22180
703-734-9494
Contact: Marketing Manager
■ Products & Services
Operating systems
Teleprocessing monitors

MOSTEK CORP
1215 Crosby Rd
Carrollton, TX 75006
214-323-6000
Contact: Dick Konrad
■ Products & Services
Local network interfaces
Microcomputer/ microprocessor systems
Add-on main memory
Applications packages
Operating systems
Automatic answering units
Automatic calling units
Voice adapters
Voice digitizers
Branch Sales Offices:

AZ Phoenix
Mostek Corp
2105 East Highland Ave
602-954-6260

CA Irvine
Mostek Corp
18004 Skypark Circle
714-549-0397

CA San Jose
Mostek Corp
1762 Technology Dr
408-287-5081

CT Greenwich
Mostek Corp
49 W Putnam
203-622-0955

FL Tampa
Mostek Corp
1111 N Westshore Blvd
813-876-1304

IL Roselle
Mostek Corp
701 E Irving Park Rd
312-529-3993

MI Livonia
Mostek Corp
29200 Vassar
313-478-1470

MN Bloomington
Mostek Corp
6101 Green Valley Dr
612-831-2322

MS Woburn
Mostek Corp
29 Cummings Pk
617-935-0635

NJ Marlton
Mostek Corp
4001 B Greentree
609-596-9200

OH Kettering
Mostek Corp
513-299-3405

TX Dallas
Mostek Corp
4100 McEwen Rd
214-386-9141

WA Seattle
Mostek Corp
1107 NE 45th St
206-632-0245

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

MOTOROLA GOV'T ELECTRONICS DIV
Box 1417
Scottsdale, AZ 85252
602-949-3232
Advertising page 67
Contact: Vicki Crain
■ Products & Services
Multiplexers, statistical (intelligent)
Earth stations
Data security devices: encoder/decoders
Data security devices: personal identification systems
Data communications consultants

MOTOROLA SEMICONDUCTOR PROD
PO Box 20912
Phoenix, AZ 85036
602-244-6900
Contact: Bob Brown
■ Products & Services
Add-on main memory
Programmable terminals
Voice digitizers
Branch Sales Offices:

AL Huntsville
Motorola Semiconductor
205-533-1650

AL Huntsville
Pen-Tech Associates
205-881-9298

AZ Scottsdale
Motorola Semiconductor
602-994-6326

CA Encino
Motorola Semiconductor
213-986-6850

CA Orange
Motorola Semiconductor
714-634-2844

CA San Diego
Motorola Semiconductor
714-560-4644

CA San Jose
Motorola Semiconductor
408-985-0510

CA Carlsbad
Addem
714-268-8448

CA Carlsbad
Ed Landa Company
714-729-7267

CA Inglewood
Basic Systems Corp
213-673-[illegible]300

CA Los A[illegible]
Ed L[illegible]y
213-87[illegible]

CA Santa Cl[illegible]
Basic Systems Corp
405-727-1800

CO Denver
Motorola Semiconductor
303-773-6800

CO Evergreen
Westek Data Products Inc
303-674-5255

CT New Haven
Motorola Semiconductor
203-281-0771

CT Hamden
J & J Associates
203-624-7800

FL Pompano Beach
Motorola Semiconductor
305-491-8141

FL Casselberry
Motorola Semiconductor
305-831-3422

FL St Petersburg
Motorola Semiconductor
813-576-6030

FL Deerfield Beach
Pen-Tech Associates
305-421-4989

FL Maitland
Pen-Tech Associates
305-645-3444

GA Atlanta
Motorola Semiconductor
404-256-0222

GA Marietta
Pen-Tech Associates
404-424-1931

IL Chicago
Motorola Semiconductor
312-576-7808

IL Chicago
First Rep Company
312-992-0830

IN Fort Wayne
Motorola Semiconductor
219-484-0436

IN Indianapolis
Motorola Semiconductor
317-849-7060

IN Indianapolis
Carter McCormic & Peirce
317-844-4175

IA Cedar Rapids
Motorola Semiconductor
319-377-9439

KS Kansas City
Motorola Semiconductor
913-384-3050

MD Bethesda
Powell-Pendergraph Inc
301-656-4335

MA Boston
Motorola Semiconductor
617-861-1350

MA Winchester
J & J Associates
617-729-5770

MI Detroit
Motorola Semiconductor
313-261-6200

MI Farmington Hills
Carter McCormic & Peirce
313-477-7700

MN Minneapolis
Motorola Semiconductor
612-545-0251

MN Eden Prairie
First Rep Company
612-944-2097

MO St Louis
Motorola Semiconductor
314-872-7681

NJ River Edge
Motorola Semiconductor
201-488-1200

NY Poughkeepsie
Motorola Semiconductor
914-896-8970

NY Hauppauge
Motorola Semiconductor
516-231-9000

NY Pittsford
Motorola Semiconductor
716-248-5494
NY Syracuse
Motorola Semiconductor
315-454-9373
NY Elmont
Crane & Egert Corp
516-488-2100
NY Fayetteville
SF Foster
315-637-5427
NY Webster
SF Foster
716-265-2072
NC Raleigh
Motorola Semiconductor
919-782-7604
NC High Point
Pen-Tech Associates
919-883-9125
OH Cleveland
Motorola Semiconductor
216-461-3160
OH Dayton
Motorola Semiconductor
513-294-2231
OH Columbus
Motorola Semiconductor
614-846-9460
OH Cleveland
Carter McCormic & Peirce
216-779-5100
OH Dayton
Carter McCormic & Peirce
513-222-7700
OK Tulsa
Motorola Semiconductor
918-664-5227
OR Portland
Motorola Semiconductor
503-244-7593
OR Beaverton
ES Chase Co Inc
503-641-4111
PA Philadelphia
Motorola Semiconductor
215-643-4500
PA Pittsburgh
Carter McCormic & Peirce
412-372-4415
PA Willow Grove
Powell-Pendergraph Inc
215-657-0330
TN Knoxville
Motorola Semiconductor
615-690-5592
TX Austin
Motorola Semiconductor
512-452-7673
TX Dallas
Motorola Semiconductor
214-661-9829
TX Ft Worth
Motorola Semiconductor
817-232-6255
TX Houston
Motorola Semiconductor
713-688-4583
TX Austin
Mycrosystmes Marketing Inc
512-452-2842
TX Dallas
Mycrosystmes Marketing Inc
214-238-7157
TX Houston
Mycrosystmes Marketing Inc
713-783-2900
UT Bountiful
Anderson Associates
801-292-8991

VA Charlottesville
Motorola Semiconductor
804-977-3691
VA Glen Allen
Powell-Pendergraph Inc
804-264-2341
WA Bellevue
Motorola Semiconductor
206-622-9960
WA Seattle
ES Chase Company Inc
206-762-4284
WI Milwaukee
Motorola Semiconductor
414-476-5554
WI Milwaukee
First Rep Company
414-546-2033
MANITOBA, CANADA
Winnipeg Manitoba
Motorola Semiconductor
204-889-0693
ONTARIO, CANADA
Downsview Ont
Motorola Semiconductor
416-661-6400
ONTARIO, CANADA
Montreal Que
Motorola Semiconductor
514-731-6881
ARGENTINA
Buenos Aires
Motorola Semiconductor
46-9797
AUSTRALIA
Sydney
Motorola Semiconductor
438-1955-434-299
BRAZIL
Sao Paulo
Motorola Semiconductor
707-286
DENMARK
Lyngby
Motorola Semiconductor
01-88-44-55
ENGLAND
Wembley
Motorola Semiconductor
01-902-8836
ENGLAND
Manchester
Motorola Semiconductor
061-833-0731
FRANCE
Paris
Motorola Semiconductor
551-50-61
GERMANY, WEST
Langehagen
Motorola Semiconductor
0511-78-20-37
GERMANY, WEST
Munich
Motorola Semiconductor
089-95-1041
GERMANY, WEST
Nurnberg
Motorola Semiconductor
0911-65761
GERMANY, WEST
Sindelfingen
Motorola Semiconductor
07031-83074
GERMANY, WEST
Wiesbaden
Motorola Semiconductor
06121-76-1921

HONG KONG
Hung-Hom
Motorola Semiconductor
3-630373-4
ISRAEL
Tel Aviv
Motorola Semiconductor
03-38973
ITALY
Bologna
Motorola Semiconductor
266905
ITALY
Milan
Motorola Semiconductor
738-6141
ITALY
Rome
Motorola Semiconductor
83-147-46
JAPAN
Osaka
Motorola Semiconductor
06-305-1241
JAPAN
Tokyo
Motorola Semiconductor
03-440-3311
MEXICO
Mexico DF
Motorola Semiconductor
905-524-8191
NETHERLANDS
Utrecht
Motorola Semiconductor
0300-510207
SINGAPORE
Singapore
Motorola Semiconductor
294-5438
SOUTH AFRICA
Bramley
Motorola Semiconductor
786-1184
SWEDEN
Solna
Motorola Semiconductor
08-82-02-95
SWITZERLAND
Geneva
Motorola Semiconductor
022-33-56-07
SWITZERLAND
Zolikon
Motorola Semiconductor
051-65-56-56/07
TAIWAN
Taipei
Motorola Semiconductor
752-8944-9

MPI
4426 S Century Dr
Salt Lake City, UT 84107
801-263-3081
Contact: Frank Irvin
■ Products & Services
Teleprinters, impact
Branch Sales Offices:
CA Inglewood
Delta Mutual Sales
614 W Manchester Blvd
213-671-6667
CA San Marcos
Vitek
930 G Boardwalk Ave
714-744-8305
CA Sunnyvale
Computer Potentials
484 Oakmead Pky
408-738-1740

CO Denver
PLS Assoc
7755 E Quincy Ave
303-773-1218
FL Orlando
GMI Assoc
3165 McCrory Pl
305-894-3354
IL Des Plaines
C W Electronic Ent
1001 E Touhy Ave
312-298-4830
MD Gathersburg
Wright Marketing
19104 Rhodes Way
301-840-1928
MA Newton Highlands
Butler Associates
82 A Winchester Ave
617-965-1080
MN Minneapolis
Bohlig & Assoc
3440 Belt Line Blvd
612-922-7011
NJ Ridgewood
Hansen & Hughes
Box 806
201-652-7055
OH Chagrin Falls
W C Koepf
16 Olive St
216-247-5129
OR Portland
Microware
10200 S W Nimbus
503-620-8150
PA Hatboro
QED Electronics
300 North York Rd
215-674-9600
TX Dallas
The Thorson Company
4445 Alpha Rd
214-233-5744

MSI DATA CORP
340 Fischer Ave
Costa Mesa, CA 92626
714-549-6000
Contact: A E Easterlin
■ Products & Services
Portable data entry terminals
Computer/communications interfaces
Maintenance organizations
Branch Sales Offices:
CA Walnut Creek
MSI Data Corp
1910 Olympic Blvd
415-944-0550
GA Atlanta
MSI Data Corp
300 Wendell Ct
404-691-7207
IL Rolling Meadows
MSI Data Corp
1931 Rohlwing Rd
312-392-8300
MA Braintree
MSI Data Corp
222 Forbes Rd
617-848-6450
MO Bridgeton
MSI Data Corp
3550 McKelvey
314-291-3080
ONTARIO, CANADA
Scarborough Ontario
MSI Data Corp
2061 McCowan Rd
416-298-7332

BELGIUM
1050 Brussels
MSI Data Corp
225 Ave Louise
011-32-2-649-20-71

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

MSP INC
21 Worthen Rd
Lexington, MA 02173
617-861-6130
Contact: David Da Costa
■ Products & Services
Data security devices: software security modules
Data communications consultants
Branch Sales Offices:
MA Lexington
MSP Inc
21 Worthen Rd
617-861-6130
ONTARIO, CANADA
Downsview
MSP Canada
120 Norfinch Dr
416-663-8640
AUSTRALIA
North Sydney
E Hassell
Box 410
02 92 0781
ENGLAND
Leicester
MSP Software Products Ltd
55 Welford Rd, James House
053 549940
FINLAND
00100 Helsinki 10
Oy Suomen Data Analys AB
Kaivokatu 10B
90 62 72 52
GERMANY, WEST
D 2084 Rellingen-l
MSP Management Software Products GmbH
Ellerbeker Weg 61F
04101 29055
SPAIN
Madrid 16
GISA
Agustin de Foxa 27
733 4054
SWEDEN
111 30 Stockholm
DataAnalys AB
Skeppsbron 18
08 21 84 11
SWITZERLAND
CH 8045 Zurich
ISP Information Services & Products
Eichstrasse 23
01 351565

MTI SALES CORP
159 Northern Blvd
Great Neck, NY 11021
516-482-3500
Contact: Len Buchholtz
■ Products & Services
Modem sharing units
Multiplexers, frequency division
Acoustic couplers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Minicomputers
Cassettes
Cassette drives
Disk drives, floppy
Disks, floppy
Tape drives, magnetic
Programmable terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:
OH Beachwood
MTI Systems
24000 Mercantile
216-464-6688
PA Philadelphia
Rohr Assoc
7902 Louise Ln
215-836-2200

MUIRHEAD INC
1101 Bristol Rd
Mountainside, NJ 07092
201-233-6010
Contact: Elaine Dompieri
■ Products & Services
Facsimile-service carriers
EIA cable testers
Facsimile terminals
Teleprinters
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:
ONTARIO, CANADA
Rexdale
Muirhead Systems
50 Galaxy Rd
416-675-7450
ENGLAND
Beckenhom, Kent
Muirhead Ltd
01-650-4888

MULTI-TECH SYSTEMS INC
82 Second Ave SE
New Brighton, MN 55112
612-631-3550
Contact: Thomas Heimerman
■ Products & Services
Acoustic couplers
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
EIA cable testers
Error rate detectors
Microcomputer/ microprocessor systems
Data access arrangement devices
Switches, data communications: manual
Branch Sales Offices:
CA Northridge
Dayton-Forester Assoc
19365 Business Ctr Dr
213-701-0127
CA Sunnyvale
Inter-Link Systems
580 Weddell Dr
408-744-1930
CO Littleton
Dapec Inc
5575 S Sycamore
303-798-6538

FL Plantation
Redlaw Corporation
5801 SW Eighth St
305-791-5459

GA Stone Mountain
General Technology Inc
Box 1048
404-498-2341

HI Kailua
Gray Assoc
1269 Maleko
808-261-3751

IL Downers Grove
PBSI Data Communications
1740 W Ogden Ave
312-852-5500

IL Oak Brook
Systems Consulting Inc
1200 Harger Rd 722
312-655-0040

KS Olathe
Inland Assoc
15021 W 117 St
913-764-7977

MD Gaithersburg
Computer Terminal Sales
615 So Frederick
301-840-9270

MA Wakefield
IMF Sales Assoc
12 Lakeside Office Pk
617-245-8900

MA Lowell
S & S Electronics
80 Stedman St
617-459-2578

MI Brighton
Dacoterm Inc
11365 Culver Rd
313-453-7250

MN Brooklyn Park
Tele-Terminals Inc
7216 Boone Av N
612-535-5330

MN Minneapolis
Loonam Assoc Inc
7720 Bush Lake Rd
612-831-1616

MO St Louis
Inland Assoc
13100 Manchester Rd
314-821-3742

NJ Roselle
TSC Data Terminals
155 E 1st Av
201-245-6333

NJ Cherry Hill
Technicomm
1101 Kings Highway 208
609-662-4620

NY Penfield
Western NY Computing
2129 Five Mile Line Rd
716-381-4120

NC Charlotte
J L Highsmith & Co
1141 Hawthorne LN
704-333-7743

OR Portland
C & L Terminals
1215 SE Ivon
503-231-0333

TX Dallas
FBM Systems
1920 McKinney Ave
214-741-6785

VA Richmond
J L Highsmith & Co
2604 D Buford Rd
804-272-5888

WA Bellevue
C & L Terminals
13500 Bel-Red Rd
206-641-6820

ONTARIO, CANADA
Ottawa
Allcom Data Ltd
5A Caesar Ave
613-226-2340

NASHUA CORP
COMPUTER PRODUCTS DIV
44 Franklin St
Nashua, NH 03061
603-880-2731
Contact: William Euller

NATIONAL DATA CORP
1 National Data Plaza
Atlanta, GA 30329
404-329-8500
Contact: C W Leizear
■ Products & Services
Front-end processors
Modem sharing units
Multiplexers, group band
Maintenance organizations
Branch Sales Offices:

CA San Francisco
National Data Corp
180 Howard St
415-777-3457

DC Washington
National Data Corp
2135 Wisconsin Ave NW
202-298-6200

GA Atlanta
National Data Corp
One National Data Plaza
404-329-8500

IL Lombard
National Data Corp
55 W 22nd St
312-620-8100

MA Boston
National Data Corp
100 Franklin St
617-426-4703

NY New York
National Data Corp
1185 Ave of the Americas;Rm 2530
212-730-7844

OR Portland
National Data Corp
200 Market Bldg
503-223-7687

PA Pittsburgh
National Data Corp
100 Fleet St
412-921-4400

SC Charleston
National Data Corp
205 King St
803-722-2257

ONTARIO, CANADA
Don Mills ON
National Data Corp
26 Lesmill Rd
416-445-7151

NATIONAL ELECTRIC CABLE
1730 Elmhurst Rd
Elk Grove Village, IL 60007
312-593-8100
Contact: Phil Drew
■ Products & Services
Cables, electrical prefabricated extending
Cables, lightwave (optical fiber)
Computer/communications interfaces
Data jacks and plugs
Branch Sales Offices:

AZ Phoenix
National Electric Cable
4540 N 44th, 46
602-266-2337

CA Palo Alto
National Electric Cable
2465 E Bayshore
415-493-1100

CO Lakewood
National Electric Cable
9150 Jewell
303-989-7200

OR Portland
National Electric Cable
16566 SW 72nd
503-620-9400

TX Houston
National Electric Cable
1400 West Belt N
713-464-8555

NAVTEL LIMITED
TEST PRODUCTS DIV
8481 Keele St
Concord, ON L4K 1B1
Canada
416-669-9918
Contact: Mark Johnston

NBI INC
1695 38th St
Boulder, CO 80301
303-444-5710
Contact: J David Pollard
■ Products & Services
Word processors, communicating
Branch Sales Offices:

AK Anchorage
Yukon Office Supply Inc
3150 C St
907-276-5088

AK Juneau
Yukon Office Supply Inc
800 Glacier Ave
907-586-6060

AZ Phoenix
Hughes Calihan Corp
4730 N 16th St
602-264-9631

AZ Tucson
Hughes Calihan Corp
1854 S Alveron
602-790-4900

AR Little Rock
City Business Machines Inc
6800 Interstate 30
501-568-4044

AR Dallas
Exeter Corp
4250 Spring Valley Rd
214-661-8887

CA Los Angeles
NBI Inc
2049 Century Pk E
213-277-6441

CA Irvine
NBI Inc
2101 Business Center Dr
714-851-1955

CA San Francisco
NBI Inc
50 California St
415-421-9229

CA San Jose
NBI Inc
4040 Moorpark Ave
408-985-8774

CA Burlingame
NBI Inc
500 Airport Blvd
415-348-3794

CA Sacramento
Sacramento Bus Systems Inc
1451 Riverpark Dr
916-920-1165

CA San Diego
BOS Systems Corp
9471 Ridgehaven Ct
714-569-0201

CO Boulder
NBI Inc
1695 38th St
303-444-5710

CO Denver
NBI Inc
1250 14th St
303-825-8403

DE Wilmington
Word Systems Inc
One Customs House Sq
302-655-4416

DC Washington
NBI Inc
1111 19th St NW
202-293-1625

FL Jacksonville
Enfields
1063 Haines St
904-355-4721

FL Miami
Enfields
4000 NW 30th Ave
305-633-1551

GA Atlanta
NBI Inc
5 Piedmont Center
404-233-7001

IL Des Plaines
NBI Inc
1011 East Touhy Ave
312-298-3700

IL Chicago
NBI Inc
111 E Wacker Dr
312-861-1140

IL Des Plaines
NBI Inc
999 E Touhy Ave
312-635-6731

IL Champaign
The Office Design Inc
309 Windsor Rd
217-398-6922

LA Shreveport
Smith Office Machines
403-05 Lake St
318-222-8363

MD Baltimore
NBI Inc
36 S Charles St
301-727-8200

MA Waltham
Spaulding Co Inc
1560 Trapelo Rd
617-890-7337

MI Birmingham
Resource Data Systems Corp
30600 Telegraph Rd
313-645-6570

MN Edina
NBI Inc
6600 France Ave S
612-922-1000

MS Jackson
Infosystems
754 N President St
601-355-5180

MO Kansas City
Electronic Bus Equip Inc
1500 Grand Ave
816-221-6400

MO St Louis
Da-Com Corp
1601 Washington Ave
314-436-2800

NJ Paramus
NBI Inc
Route 17 & Century Rd
201-262-0420

NM Albuquerque
New Mexico Word Processing
2401 Wisconsin NE
505-293-4733

NY New York
NBI Inc
1 Penn Pl
212-564-2936

NC Charlotte
Cavin's Bus Products Inc
108 E Morehead St
704-334-1628

NC Fayetteville
Cavin's Bus Prod Inc
724 Hay St
919-485-5151

OH Columbus
Gordon Flesch Co
4255 Dipolmacy Dr
614-876-1174

OH Dayton
J M Woodhull Inc
719 S Main St
513-461-5734

OK Oklahoma City
Commercial Business Equip
7420 N Broadway
405-848-5570

OR Eugene
Business Equip Sales Inc
943 W Seventh Ave
503-683-3182

OR Portland
Business Equip Sales Inc
310 SW 4th Ave
503-227-3676

PA Conshohocken
Word Systems Inc
151 E Tenth
215-828-8422

PA Bala Cynwyd
Word Systems Inc
One Bala Cynwyd Plaza
215-667-9680

PA Pittsburgh
Multiscope Inc
100 Fifth Ave Bldg
412-456-1050

TX Houston
NBI Inc
2727 Allen Parkway
713-522-3332

TX Sherman
Texoma Business Machines
120 W Mulberry
214-892-2144

TX El Paso
Business Forms Inc
2514 E Yandell
915-533-4241

UT Salt Lake City
NBI Inc
370 E South Temple
801-364-8571

VA Rosslyn
NBI Inc
1117 N 19th St
703-522-6515

VA Virginia Beach
Info Proc Consultants Inc
116 Birchwood Park Dr

WI Madison
Gordon Flesch Co Inc
2101 W Beltline Hwy
608-271-2100

WI Brookfield
Gordon Flesch Co
3725A N 126th St
414-783-7000

NCR COMTEN INC
2700 Snelling Ave N
St Paul, MN 55113
612-638-7777
Contact: Edward J Clark
■ Products & Services
Concentrators
Front-end processors
Message switchers
Modem sharing units
Remote network processors
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modem eliminators
MIL 188C adapters
Disk drives, large
Tape drives, magnetic
Batch terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Automatic calling units
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: manual
Maintenance organizations

Branch Sales Offices:

CA Los Angeles
NCR Comten Inc
9841 Airport Blvd
213-641-4390

CA Los Angeles
NCR Comten Inc
1940 Century Park E
213-556-5252

CA San Mateo
NCR Comten Inc
1700 S Amphlett Blvd
415-349-1612

CA Los Angeles
NCR Comten Inc
9841 Airport Blvd
213-641-4390

CO Denver
NCR Comten Inc
2000 S Colorado Blvd
303-758-3334

CT Hartford
NCR Comten Inc
999 Asylum Ave
203-527-4326

FL Orlando
NCR Comten Inc
6900 S Orange Blossom Trail
305-859-9395

GA Marietta
NCR Comten Inc
2480 Windy Hill Rd
404-952-0200

IL Downers Grove
NCR Comten Inc
1100 31st St
312-969-9100

MD Rockville
NCR Comten Inc
3 Choke Cherry Rd
301-948-8000

MA Lexington
NCR Comten Inc
1040 Waltham
317-863-1414

MI Birmingham
NCR Comten Inc
Bingham Office Center
313-647-4300

MO St Louis
NRC Comten Inc
9811 South Forty Dr
314-993-6677

NJ Medford
NRC Comten Inc
Tauton Blvd
609-654-5133

NY New York City
NRC Comten Inc
300 E 42 St
212-599-4450

NY Elmsford
NRC Comten Inc
33 W Tarrytown Rd
914-592-5709

OH Columbus
NRC Comten Inc
955 Eastwind Dr
614-891-2908

OH Cincinnati
NRC Comten Inc
415 Glenspring Dr
513-851-5500

PA Cleveland
NRC Comten Inc
3950 Euclid Ave
215-881-2217

PA Pittsburgh
NCR Comten Inc
355 Fleet St
412-921-4466

TX Dallas
NCR Comten Inc
13618 Gamma Rd
214-233-7000

TX Houston
NCR Comten Inc
4151 SW Freeway
713-961-4111

WA Tukwila
NCR Comten Inc
6100 S Center Blvd
206-241-2204

ONTARIO, CANADA
Toronto
NCR Comten Ltd
505 Consumers Rd
416-496-1300

ENGLAND
London
NCR Comten Inc
23/24 Great James St
01-405-0085

NCR CORP
1700 South Patterson Blvd
Dayton, OH 45479
513-445-5000
Contact: D M Peck
■ Products & Services
Concentrators
Front-end processors
Message switchers
Packet processors
Acoustic couplers
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modem eliminators
DDP systems
Add-on main memory
Cartridges
Cartridge drives
Cassettes
Cassette drives
Disk drives, floppy
Disk drives, large
Tape, magnetic
Tape drives, magnetic
Tape punch/reader, paper
Badge readers
Bar code readers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Remote line printers
Remote job entry terminals
Teleprinters, non-impact
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Automatic answering units
Automatic calling units
Data access arrangement devices
Data communications consultants
Lease and resale organizations
Maintenance organizations
Timesharing/service bureaus

NEC INFORMATION SYSTEMS INC
5 Militia Dr
Lexington, MA 02173
617-862-3120
Contact: Jack Flynn
■ Products & Services
DDP systems
Local networks
Microcomputer/ microprocessor systems
Minicomputers
Disk drives, large
Programmable terminals
Interactive terminals
Remote line printers
Teleprinters, impact
Teletypewriters
Word processors, communicating
Applications packages
DDP systems software
Operating systems
Personal computer communications software
Word processing packages
Computer/communications interfaces
Ribbons and supplies for terminals and printers

Branch Sales Offices:

CA Torrance
NEC Information Systems
19401 S Vermont Ave
213-515-0106

CA San Francisco
NEC Information Systems
44 Montgomery
415-392-6918

CA Los Angeles
NEC Information Systems
8939 S Sepulveda
213-670-7346

CA Sunnyvale
NEC Information Systems
599 N Mathilda
408-254-6191

FL Orlando
NEC Information Systems
8000 S Orange Ave
305-857-0166

GA Atlanta
NEC Information Systems
2945 Flowers Rd S
404-458-7014

IL Rolling Meadows
NEC Information Systems
2 Crossroads of Commerce
312-870-8660

IL Elgin
NEC Information Systems
551C Toll Gate Rd
312-931-1850

NY New York
NEC Information Systems
529 Fifth Ave
212-687-9250

OH Parma Heights
NEC Information Systems Inc
6500 Parl Road
216-842-7930

OH Dayton
NEC Information Systems
3400 S Dixie Dr
513-294-6254

PA Bala Cynwyd
NEC Information Systems
111 Presidential Blvd
215-667-1571

TX Dallas
NEC Information Systems
8150 N Central Expwy
214-691-7111

TX Arlington
NEC Information Systems
1333 W Pioneer Pkwy
817-261-3358

NESTAR SYSTEMS INC
2585 E Bayshore Rd
Palo Alto, CA 94303
415-493-2223
Contact: Michael S Chase
■ Products & Services
DDP systems
Local networks
Local network interfaces
Microcomputer/ microprocessor systems
Local network software
Transport software
Access program
Personal computer communications software

Branch Sales Offices:

CO Colorado Springs
Computer Mart
3275 E Platte Ave
303-635-2578

CT Orange
Computerease
733 Derby, Milford Rd
203-795-3600

DE Newark
Computerland/Newcastle
Astro Shopping Center, Kirkwood Hgwy
302-738-9656

IL Galesburg
Custom Computer Applications
Weinborg Arcade
309-342-7161

MD Columbia
Combined Management Systems
10522 Green Mountain Circle
301-596-0874

MD Ellicott City
The Logical Choice
9200 Baltimore National Pike
301-465-3175

MA Southboro
Victor Electronics
304 Turnpike Rd
617-481-4010

MI Framington
Computer Connection
38437 Grand River
313-477-4470

MI Birmingham
Simtec
4114 W Maple Rd
313-852-3488

NY New York City
Morris Decision Systems
70 Pine St
212-742-9590

OK Norman
Pro-Am Photo & Micro Computing
513 W Gray
405-364-5992

PA Erie
Mace Electronics
2631 W 8th St
814-838-3517

SD Rapid City
Computerland/Rapid City
738 St Jose St
605-348-5384

TX Dallas
KA Electronics
9090 Stemmons Freeway
214-634-7870

ONTARIO, CANADA
Mississauga
Computerland/Toronto
5200 Dixie Rd
416-624-2382

QUEBEC, CANADA
Montreal
Computerland/Montreal
4160 St Catherine St W
514-933-4208

NETWORK ANALYSIS CORP
130 Steamboat Rd
Great Neck, NY 11024
516-829-5900
Contact: Kenneth Oliver
■ Products & Services
Custom programs
Data communications consultants
Educational services
Network simulation services

Branch Sales Offices:

NY Great Neck
Network Analysis Corp
130 Steamboat Rd
516-829-5900

VA Vienna
Network Analysis Corp
301 Tower Bldg
703-281-7440

ENGLAND
London
PACTEL
33 Greycoat St
01-828-6374

NETWORK SYSTEMS CORP
7600 Boone Ave N
Brooklyn Pk, MN 55428
612-566-5050
Contact: C Don Haeny
■ Products & Services
Local networks
Local network software
Computer/communications interfaces

Branch Sales Offices:

AL Huntsville
Network Systems Corp
3322 S Memorial Pkwy
205-539-7929

CA San Mateo
Network Systems Corp
1670 S Amphlett Blvd
415-572-0331

CA Santa Fe Springs
Network Systems Corp
12631 E Imperial Hwy
213-863-4856

CO Denver
Network Systems Corp
1582 S Parker Rd
303-695-0283

GA Atlanta
Network Systems Corp
1925 Century Blvd
404-325-8417

IL Oak Brook
Network Systems Corp
2625 Butterfield Rd
312-323-6240

MA Braintree
Network Systems Corp
14 Wood Rd
617-843-6562

MI Southfield
Network Systems Corp
29551 Greenfield Av
313-569-1801

NJ Paramus
Network Systems Corp
15 Prospect St
201-368-8024

OH Dayton
Network Systems Corp
3300 S Dixie Dr
513-294-4207

PA Center Square
Network Systems Corp
1166 DeKalb Pike
215-277-6620

RI Wickford
Network Systems Corp
16 W Main St
401-294-9407

TX Houston
Network Systems Corp
17625 El Camino Real
713-488-8088

TX Dallas
Network Systems Corp
1309 W 15th St
214-424-2907

VA Vienna
Network Systems Corp
513 W Maple Ave
703-281-0455

WA Seattle
Network Systems Corp
15 Grady Way
206-271-1740

AUSTRALIA
Milsons Point
Karnang Pty Ltd
61 Lavender St
920858

FRANCE
Paris 15
Tesdata SA
104 Rue Castagnary
01-533-7300

NICOLET ZETA CORP
PO Box 4003
Concord, CA 94520
415-671-0600
Contact: Gary Hasenfus
■ Products & Services
Digital plotters

Branch Sales Offices:

ONTARIO, CANADA
Mississauga
Nicolet Instruments Canada Ltd
1-1200 Aerowood Dr
416-625-8302

AUSTRALIA
St Leonards, NSW
Electronic Assoc Pty
48 Atchison Str
439-7522

CHILE
Santiago
Sistemas de Computacion SA
Jose M Infante 50
462041

DENMARK
4600 Koege
Trend Electronics
Britisk-Skandinavisk A/S
03-652345

ENGLAND
Warwick
Nicolet Instrument Ltd
Budbrooke Rd
0926-44111

Products are listed alphabetically in the **Products & Services Directory, page 7.**

FRANCE
Sevres
Tekelec Airtronic
Rue Carle Vernet
1-027-75-35

GERMANY, WEST
6050 Offenbach Main
Nicolet Instrument Gmbh
Senefelderstrasse 162
06-11-83-70001

GREECE
Athens 118
Logic Hellas Ltd
Amalias 26
3232217-3246979

ISRAEL
Ramat-Gan
Morav Technology Ltd
28 Arlazorov St
730938, 735790

ITALY
Rome
Technitron Srl
Via G Mangili 20
06-805-647

JAPAN
Osaka
Nicolet Japan Corp
8-7-6 Chome;Nishi-Nakajama
06-305-2150

MALAYSIA FED OF
Kuala Lumpur 22-16
Unidata SDN Berhad
6th Flr Syed Kechik Foundation
940666

MEXICO
Mexico 12 DF
Soluciones Graficas SA
San Francisco 657-A
575-56-98

NETHERLANDS
1103 AP Amsterdam
E M E M Co BV
Bijlmerdreef Bldg; Geinwijk Nr 113
020-907259

NETHERLANDS
The Hague
Repko b.v.
Box 63439 Yodogawa-KU
070-46908

NEW ZEALAND
Aukland
International Data Ltd
60 Parnell Rd Parnell
797-691

REPUBLIC OF CHINA
Taipei
Computek Inc
11, Alley 19, Lane 216 Chung Hsiao East Road, Sec 4
02-721-2203

SOUTH AFRICA
Johannesburg 2000
Spescom
Box 6270
834-7551

SPAIN
Madrid
Eset sa
Columbia 62

SWEDEN
Farsta
Tel Inter AB
Forshagagatan 58
08/940490

SWITZERLAND
CH-8810 Horgen 1
Comptronix AG
Drusvergstrasse
01-725-04-10

VENEZUELA
Caracas 107
Digidata CA
Esquina Calles 5 y 10 La Urbina
Edificio Walpiremad Local 2
38-73-57—38-77-48

NIXDORF COMPUTER CORP
300 Third Ave
Waltham, MA 02154
617-890-3600
Advertising page 96
Contact: R Taylor
■ Products & Services
DDP systems
Local networks
Minicomputers
Word processors, communicating

Branch Sales Offices:

AL Birmingham
Nixdorf Computer Corp
500 Century Park South
205-979-3021

CA Culver City
Nixdorf Computer Corp
6120 Bristol Pkwy
213-642-0030

CA Los Angeles
Nixdorf Computer Corp
4311 Wilshire Blvd
213-937-5700

CA San Diego
Nixdorf Computer Corp
4710 Ruffner St
714-565-9604

CO Denver
Nixdorf Computer Corp
2460 W 26 Ave
303-455-3282

CT Wethersfield
Nixdorf Computer Corp
465 Silas Deane Hwy
203-563-9053

CT Darien
Nixdorf Computer Corp
397 Post Rd
203-655-6022

CT Westport
Nixdorf Computer Corp
325 Post Rd
203-222-1453

FL Miami
Nixdorf Computer Corp
1405 NW 167 St
305-620-9022

FL Altamonte Springs
Nixdorf Computer Corp
435 Whooping Loop
305-339-6100

FL Tampa
Nixdorf Computer Corp
5420 Bay Center Dr
813-879-2305

GA Atlanta
Nixdorf Computer Corp
1815 Century Blvd NE
404-325-8300

IL Chicago
Nixdorf Computer Corp
20 N Wacker Dr
312-782-5682

IL Chicago
Nixdorf Computer Corp
5725 E River Rd
312-693-7320

IL Springfield
Nixdorf Computer Corp
100 W Cook St
217-789-7709

IN Indianapolis
Nixdorf Computer Corp
2421 Production Dr
317-248-0538

LA Metairie
Nixdorf Computer Corp
3616 South 1-10 Servie Rd W
504-838-8787

MD Linthicum
Nixdorf Computer Corp
793 Elkridge Landing Rd
301-796-3780

MA Waltham
Nixdorf Computer Corp
204 Second Ave
617-890-6891

MI Southfield
Nixdorf Computer Corp
23777 Southfield Rd
313-569-2525

MN Minneapolis
Nixdorf Computer Corp
Southdale Office Center; 6700 France Ave
612-929-0341

MO Maryland Heights
Nixdorf Computer Corp
100 Progress Pkwy
314-878-0636

MO Kansas City
Nixdorf Computer Corp
3100 South Broadway; Penn Tower Office Center
816-531-1931

NJ Bloomfield
Nixdorf Computer Corp
400 Broadacres Dr
201-338-1700

NY New York
Nixdorf Computer Corp
1 Penn Plaza
212-736-4040

NY New Hyde Park
Nixdorf Computer Corp
3003 New Hyde Park Rd
516-328-1700

NC Charlotte
Nixdorf Computer Corp
7 Woodlawn Green
704-525-5281

OH Cleveland
Nixdorf Computer Corp
5755 Granger Rd
216-398-9210

OH Columbus
Nixdorf Computer Corp
5300 E Main St
614-861-4280

OH Cincinnati
Nixdorf Computer Corp
4000 Executive Park Dr
513-563-8943

PA Wayne
Nixdorf Computer Corp
1275 Drummers Ln
215-687-9280

PA Pittsburgh
Nixdorf Computer Corp
Two Gateway Center
412-391-8686

TN Chattanooga
Nixdorf Computer Corp
6100 Building
615-892-1302

TN Nashville
Nixdorf Computer Corp
2500 21st Ave
615-383-0610

TX Houston
Nixdorf Computer Corp
2425 Fountain View Dr
713-977-3017

TX Dallas
Nixdorf Computer Corp
7929 Brookriver Dr
214-630-3343

TX San Antonia
Nixdorf Computer Corp
9200 Broadway
512-822-8412

WI Brookfield
Nixdorf Computer Corp
250 Bishops Way
414-786-9250

WI Madison
Nixdorf Computer Corp
1955 W Broadway
608-221-4264

BRITISH COLUMBIA, CANADA
Vancover
Nixdorf Canada Ltd
636 W Broadway
604-683-4735

NEWFOUNDLAND, CANADA
St Johns
Beothuk Data Systems Ltd
Box 9310 Station B
709-753-3333

ONTARIO, CANADA
Ottowa
Nixdorf Canada Ltd
112 Bent St
613-236-4413

ONTARIO, CANADA
Willowdale
Nixdorf Canada Ltd
505 Consumers Rd
416-498-7200

JAPAN
Tokyo
Marubeni Electronics
16-16 Toranomon 1 Chome;
Minato-Ku
81-3-5074530

PHILIPPINES
Manila
Summa Computer Sue Corp
De la Rosa & Salcedo Sts
85-42-36

VENEZUELA
Caracas
Ingedigit CA
Edificio Edifica Piso
2;Urbanizacion El Rosal
58-2-323150

NOLTON COMMUNICATIONS
Fieldings Rd
Cheshunt, Herts EN8 9TL
England
Waltham Cross 33555
Contact: R J Bell
■ Products & Services
Modem sharing units
Multiplexers, statistical (intelligent)
Packet processors
Line drivers
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
EIA cable testers
Protocol analyzers
Network management centers
Video data terminals (RO)
Code/protocol conversion programs
Computer/communications interfaces
Data communications consultants

NORTHERN TELECOM INC
259 Cumberland Bend
Nashville, TN 37228
615-256-5900
Contact: Robert Duthie
■ Products & Services
Packet-switching carriers
Branch exchanges—computerized (CBX)
Data content monitors
EIA cable testers
Error rate detectors
Protocol analyzers
Response-time monitors
RTS emulator
Network management centers
Technical control centers
Switches, data communications: automatic
Switches, data communications: manual

NORTHERN TELECOM INC
NORTHEAST ELECTRONICS DIV
Airport Rd
Concord, NH 03301
603-224-6511
Contact: Don Larson
■ Products & Services
Electrical-parameters test equipment

Branch Sales Offices:
CA Mountain View
Northern Telecom
643 Escuela Av
415-964-4818

IL Aurora
Northern Telecom
18 N Anderson
603-224-6511

IN Carmel
Northern Telecom
4646 Royal Oak La
603-224-6511

IA Des Moines
Northern Telecom
1812 56 St
603-224-6511

NH Concord
Northern Telecom
Box 649
603-224-6511

NY Mallory
Northern Telecom
Box 7
603-224-6511

NC Carthage
Northern Telecom
Route 3, Wedgewood
603-224-6511

PA Newton
Northern Telecom
Box 542
603-224-6511

TN Blountville
Northern Telecom
Box 275A
603-224-6511

TX Mt Pleasant
Northern Telecom
Box 180
603-224-6511

ALBERTA, CANADA
Edmonton
NEDCO
403-425-1510

ENGLAND
Chepstow, Gwent
Northern Telecom
High Street
2912-5614

FRANCE
Dollard des Ormeaux
Northern Telecom
12 Montclair
514-620-3257

Want even more information on products?
Turn to **UpDate Service Card, page 201.**

NORTHERN TELECOM INC BUSINESS COMMUNICATIONS SYSTEMS
1001 E Arapoho Rd
Richardson, TX 75081
214-234-5300
Contact: James Hix
■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX, EPBX, etc.)
Packet processors
Switches, data communications: automatic

Branch Sales Offices:
CA Los Alamitos
Business Communications Systems
11131 Winners Cr Los Caballeros Ctr
213-591-1121

CA Santa Monica
Business Communications Systems
3340 Ocean Park Blvd
213-450-4075

CA San Jose
Business Communications Systems
2190 Bering Dr
415-579-0900

CO Aurora
Business Communications Systems
3568 Peoria St
303-528-2161

CT E Hartford
Business Communications Systems
100 Prestige Pk Rd
203-528-2161

FL Jacksonville
Business Communications Systems
4019 Woodcock Ave
904-398-2790

FL St Petersburg
Business Communications Systems
3249 Tech Dr North
813-576-3414

GA Atlanta
Business Communications Systems
6291 Barfield Rd NE
404-256-5820

IL Chicago
Business Communications Systems
401 S Busse Rd
312-593-6020

MA Southboro
Business Communications Systems
302 Turnpike Rd
617-481-3400

NY New York
Business Communications Systems
200 Broadacres Corp Pk
201-893-0060

NY New York
Business Communications Systems
747 Third Ave
212-371-9020

NY Rochester
Business Communications Systems
32 Highview Trail
716-248-8197

OR Portland
Business Communications Systems
7911 NE 33rd Dr
503-284-5254

PA Philadelphia
Business Communications Systems
133 Gaither Dr
609-778-1550

TN Memphis
Business Communications Systems
3010 Vantage Dr
901-345-6491

TN Nashville
Business Communications Systems
742 Freeland Station
615-244-5065

TX Richardson
Business Communications Systems
1001 E Arapaho Rd
214-234-5300

VA McLean
Business Communications Systems
1749 Old Meadow Rd
703-442-0690

WA Seattle
Business Communications Systems
18000 Pacific Hwy S
206-246-1965

NORTHERN TELECOM INC
ELECTRONIC OFFICE SYSTEMS
PO Box 1222
Minneapolis, MN 55440
612-932-8000
Contact: Staunton T Oppenheimer

■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
DDP systems
Local networks
Minicomputers
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Terminal controllers
DDP systems software
Emulation packages
Local network software
Operating systems
Word processing packages

Branch Sales Offices:

AL Homewood
Northern Telecom Inc Electronic Office Systems
3512 Old Montgomery Highway
205-870-1367

AZ Phoenix
Northern Telecom Inc Electronic Office Systems
10030 N 25th Dr
602-861-1311

CA El Segundo
Northern Telecom Inc Electronic Office Systems
2230 E Imperial Highway
213-640-2743

CA Sacramento
Northern Telecom Inc Electronic Office Systems
2277 Fair Oaks Blvd
916-920-3759

CA Burlingame
Northern Telecom Inc Electronic Office Systems
1350 Bayshore Highway
415-392-4000

CA Newport Beach
Northern Telecom Inc Electronic Office Systems
1420 Bristol St N
714-955-2850

CO Englewood
Northern Telecom Inc Electronic Office Systems
8475 E Orchard Rd
303-770-3990

CT Wethersfield
Northern Telecom Inc Electronic Office Systems
936 Silas Deane Hwy
203-721-0011

CT Greenwich
Northern Telecom Inc Electronic Office Systems
95 East Putnam Ave
203-869-8200

FL Winter Park
Northern Telecom Inc Electronic Office Systems
1177 Louisiana Ave
305-645-0300

FL Miami
Northern Telecom Inc Electronic Office Systems
8245 NW 53 St
305-592-1533

FL Tampa
Northern Telecom Inc Electronic Office Systems
5444 Bay Center Dr
813-870-1367

GA Atlanta
Northern Telecom Inc Electronic Office Systems
2951 Flowers Rd
404-452-0020

IL Mt Prospect
Northern Telecom Inc Electronic Office Systems
1699 Wall St
312-981-3700

IL Chicago
Northern Telecom Inc Electronic Office Systems
303 East Wacker Dr
312-938-9150

IN Indianapolis
Northern Telecom Inc Electronic Office Systems
400 E Southport Rd
317-788-1577

IA Clive
Northern Telecom Inc Electronic Office Systems
8564 Alice Ave
515-276-4925

KY Louisville
2210 Goldsmith Ln
502-456-6655

LA New Orleans
Northern Telecom Inc Electronic Office Systems
175 Brookhollow Esplanade
504-733-7430

MA Waltham
Northern Telecom Inc Electronic Office Systems
303 Wyman St
617-890-7290

MI Grand Rapids
Northern Telecom Inc Electronic Office Systems
3040 Charlevoix Dr SE
616-942-7700

MI Southfield
Northern Telecom Inc Electronic Office Systems
21411 Civic Center
313-358-5065

MN Minneapolis
Northern Telecom Inc Electronic Office Systems
Box 1338
612-932-8555

MO St Louis
Northern Telecom Inc Electronic Office Systems
1810 Craig Rd
314-878-4911

MO Kansas City
Northern Telecom Inc Electronic Office Systems
1575 N Universal Ave
816-241-5040

NJ Mt Laurel
Northern Telecom Inc Electronic Office Systems
305 Fellowship Rd
609-778-8880

NJ Woodbridge
Northern Telecom Inc Electronic Office Systems
1000 Rt 9 N Sutton Pl
201-634-7800

NY New York
Northern Telecom Inc Electronic Office Systems
One Penn Plaza
212-947-8500

NY Syracuse
Northern Telecom Inc Electronic Office Systems
202 Twin Oaks Dr
315-437-5544

NY Buffalo
Northern Telecom Inc Electronic Office Systems
1412 Millersport Highway
716-688-0631

NY New York
Northern Telecom Inc Electronic Office Systems
633 Third Ave
212-867-6200

NC Charlotte
5601 77 Center Dr
704-525-5500

NC Greensboro
Northern Telecom Inc Electronic Office Systems
2302 Meadowview Rd
919-292-7207

OH Cincinnati
Northern Telecom Inc Electronic Office Systems
4700 Ashwood Dr
513-984-0902

OH Columbus
Northern Telecom Inc Electronic Office Systems
2021 E Dublin Granville Rd
614-888-8655

OH Cleveland
Northern Telecom Inc Electronic Office Systems
666 Independence Towers
216-742-4840

OK Tulsa
Northern Telecom Inc Electronic Office Systems
9920 E 42nd St
918-665-3372

OR Portland
Northern Telecom Inc Electronic Office Systems
9500 SW Barbur Blvd
503-245-2426

PA Pittsburgh
Northern Telecom Inc Electronic Office Systems
200 Fleet St
412-921-9930

PA Harrisburg
Northern Telecom Inc Electronic Office Systems
2001 North Front St
717-238-3018

TN Nashville
Northern Telecom Inc Electronic Office Systems
4731 Trousdale Dr
615-331-4460

TX Dallas
Northern Telecom Inc Electronic Office Systems
13612 Midway Rd
214-386-4151

TX Houston
Northern Telecom Inc Electronic Office Systems
6776 Southwest Frwy
713-977-8833

VA McLean
Northern Telecom Inc Electronic Office Systems
1749 Old Meadow Rd
703-442-0670

VA Richmond
Northern Telecom Inc Electronic Office Systems
1504 Santa Rosa Rd
804-288-7271

WA Seattle
Northern Telecom Inc Electronic Office Systems
18000 Pacific Hwy S
206-246-1965

WI Brookfield
Northern Telecom Inc Electronic Office Systems
16535 W Bluemound Rd
414-784-8550

BRITISH COLUMBIA, CANADA
Vancouver
Northern Telecom Inc Electronic Office Systems
1665 W Broadway
604-734-1201

ONTARIO, CANADA
Nun's Island
Northern Telecom Inc Electronic Office Systems
4 Place du Commerce
514-761-6111

ONTARIO, CANADA
Don Mills
Northern Telecom Inc Electronic Office Systems
95 Barber Greene Rd
416-455-6550

ONTARIO, CANADA
Ottawa Ont
Northern Telecom Inc Electronic Office Systems
460 O'Connor St
613-236-8972

ONTARIO, CANADA
Hamilton Ontario
Northern Telecom Inc Electronic Office Systems
1685 Main St W
416-523-8137

QUEBEC, CANADA
Winnipeg Manitoba
Northern Telecom Inc Electronic Office Systems
79-1313 Border St
204-630-6878

QUEBEC, CANADA
Calgary Alberta
Northern Telecom Inc Electronic Office Systems
4400 McLeod Trail NE
403-273-7500

QUEBEC, CANADA
Quebec Quebec
Northern Telecom Inc Electronic Office Systems
Carrefou St Sacrement 1279 boul Charest Ouest
418-687-4151

AUSTRIA
Vienna
Data 100 GmbH
Reisnerstrasse 18 A-1030
72-24-52

BELGIUM
Brussels
SA Data 100 NV
100 B 15
720-92-30

ENGLAND
Hemel Hempstead
Data 100 Limited
Maxted Close
61281

FRANCE
Paris
Data 100 SA
La Boursidiere RN 186;92350 Le Plessis Robinson
630-21-44

GERMANY, WEST
Frankfurt
Data 100 GmbH
Myliusstrasse 33-37;600 Frankfurt/M1
72-04-71

ITALY
Milan
Data 100 SPA
Via Turati 29, 20121
02-654-731

NETHERLANDS
Amsterdam
Data 100 BV
Bldg Bavinckstaete;Pr of J H Bavincklaan 5
020-471621

SPAIN
Madrid
Data 100 SA
Edificio UAP;Avda Del Generalismo 11 Pl 2
455-62-25

SWITZERLAND
Zurich
Data 100 AG
Baumackerstrasse 46 CH-8050
311.66.20

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

NORTHERN TELECOM INC
SPECTRON DIV
344 New Albany Rd
Moorestown, NJ 08057
609-234-5700
Advertising pages 76-77
Contact: Bill Gruenwald
■ Products & Services
Modem sharing units
Port sharing units
Line drivers
Modems, limited distance
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Error rate detectors
Protocol analyzers
Response-time monitors
Network management centers
Technical control centers
Programmable terminals
Teleprinters, non-impact
Video data terminals (KSR)
Video data terminals (RO)
Teleprocessing monitors
Cables, electrical prefabricated extending
Data jacks and plugs
Furniture, cabinets, terminal enclosures
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Data communications consultants
Educational services
Network simulation services

Branch Sales Offices:

AZ Phoenix
Zeus
546 E Portland
602-253-6101

CA Sunnyvale
Spectron
292 Gilbralter Dr
408-734-4016

CA Anaheim
Spectron
1725 S Douglass Rd
714-993-9249

CO Denver
Zeus
3333 Quebec St
303-321-4246

GA Atlanta
Spectron
404-448-4865

IL Lombard
Spectron
405 S Eisenhower Ln
312-620-8777

MD Silver Springs
Computer Complements
1110 Fidler La
301-589-2802

MA Wellesly
Datamart
180 Linden St
617-235-5520

MI Detroit
Spectron
313-559-4544

MN Minneapolis
Spectron
612-472-3633

MO Clayton
Information Products
230 S Bemiston
314-721-0401

MO Independence
Information Products
1201 Randall Rd
316-252-3700

NE Omaha
Information Products
5705 S 152 Ave
402-895-5850

NJ Mt Laurel
Spectron
127 Gaither Dr, Suite B
609-234-8440

NJ Moorestown
Spectron
344 New Albany Rd
609-234-5700

NM Albuquerque
Zeus
310 Vale Verde SE
505-268-3941

NY Suffern
Spectron
222 Rt 59 Ramapo
914-357-5331

OH Columbus
Spectron
614-846-2983

PA Pittsburgh
Spectron
609-234-5700

TX Richardson
Spectron
300 N Central Expwy
214-690-3451

TX Houston
Spectron
713-686-2072

ONTARIO, CANADA
Brampton Ontario
Peripheral System
8200 Dixie Rd
416-792-3877

ARGENTINA
Buenos Aires
Racal-Milgo
Balcarce
26-6001/10

AUSTRALIA
North Sidney
Datacraft Pty Ltd
41 McLaren St
922-5358

AUSTRALIA
Croydon, Victoria
Datacraft Pty Ltd
Box 353
725-5477

AUSTRIA
Munchen
Wetronic Automation
Claude Lorrain Str 29
652096

BELGIUM
Bruxelles
Telindus SA
Kroonlaan 357; Ave de la Couronne
846-22760

BOLIVIA
Lima
Cantec SA
Casilla 2489
245461

BRAZIL
Sao Paulo
Elebra SA
Av Bogaert
272-4255

CHILE
Santiago
Controles Y Senales Ltda
PO Box 14627
391-241

COLOMBIA
Bogota
Coldatos Ltda
Calle 30A #622;Oficina 2802
69-89-38

DENMARK
Valby
BLT Agenturer A/S
GL Koege Landevej 55
161100

ECUADOR
Quito
Iseyco C/A Ltd
Dept 601
231417

ENGLAND
Tring, Herts
General Audio & Data Comm Ltd
70/81 Akeman St
44-442824011

FINLAND
Espoo
OY Emmett AB
Itaportti 1 E-F
009358/0882044

FRANCE
Paris
Elexo, SA
BP 24
9302880

GERMANY, WEST
Muenchen
Wetronic Automation GmbH
Claude-Lorrain-Str 29
089-49-652096

HONG KONG
Causeway Bay
Datacraft Pty Ltd
2-20 Paterson St
5-769078

INDIA
New Delhi
Harvik Electronics Corp
9A Connaught Pl
343254

ISRAEL
Tel Aviv
EL-UL Technologies Ltd
35 Shaul Hamelich Blvd
221093/240297

ITALY
Milano
Elettronucleonica SPA
Piazza de Angeli 7
4982451

JAPAN
Osaka
Toyo Corp
Suzuki Bldg 2-38
Junkeimachidori;Minami-Ku
06-262-3471

JAPAN
Nagoya
Toyo Corp
1554 Issha Nakanedori-Ue;
Idako-Cho Meito-ku
052-772-2971

JAPAN
Tokyo
Toyo Corp
2, 1-Chome
Hongoku-cho;Nihonbushi Chuc
03-279-0771

KOREA REP (REP)
Seoul
KDC
Box 5956
73-8555

MALAYSIA FED OF
Kuala Lampur
Racal Electronics Pte Ltd
Jalan Raja Chulan
205962

MEXICO
Mexico 4, DF
Datatron, SA
Carpio 253
541-69-72

NETHERLANDS
The Hague
Koning en Hartman
Box 43220
3170210101

NEW ZEALAND
Lower Hutt
Datacraft
417 Cuba St
661387

NORWAY
Oslo
Bergman & Plesner,
Instrumentering A/S
Box 12, Veitvet
00947-2162210

SINGAPORE
Singapore
Racal Electronics Pte Ltd
Magazine Rd
39098

SOUTH AFRICA
Randburg
Grinel Data Systems
2125 Transvaal
789-1441

SPAIN
Madrid
Emeco
Azuli
458-0645

SWEDEN
Upplands Vasbzy
Johan Lagercrantz KB
Box 48
0760-86120

SWITZERLAND
Lausanne
Datelec SARL
Rue De Bourg 27;CH 1002
021-229238

TAIWAN
Taipei
Fairstar Corp
Box 68-1547

THAILAND
Bangkok
Anglo-Thai Engineering Ltd
Box 18;137 Wireless Rd
252-5091

VENEZUELA
Chacao-Caracas
Datatec CA
Apartado Postal 60216
239-4222

NORTHSTAR COMPUTERS
14440 Catalina St
San Leandro, CA 94577
415-357-8500
Contact: Rhine Meyering
■ Products & Services
Microcomputer/ microprocessor systems
Applications packages
Word processing packages

NORTHWEST MICROFILM INC
1600 67 Ave
Minneapolis, MN 55430
612-566-5950
Contact: Stephen D Twite
■ Products & Services
Microfilm equipment, systems and services
Branch Sales Offices:
MN Minneapolis
15 S 9 St
612-375-1444
MO Kansas City
Northwest Microfilm Inc
1660 Broadway
816-421-8240
MO St Louis
Northwest Microfilm Inc
100 N Broadway
314-621-5252
NE Omaha
Northwest Microfilm Inc
206 S 19 St
402-346-7818

NOTIFIER CO
3700 N 56 St
Lincoln, NE 68504
402-464-0211
Contact: Mark Larson
■ Products & Services
Fire detection/protection equipment
Branch Sales Offices:
CA Torrence
James Harney
560 Alaska Ave
213-328-8670
NJ Toms River
Harold Warmuth
278 Harrington Dr
201-341-4396

NOVA ELECTRIC MFG CO
263 Hillside Av
Nutley, NJ 07110
201-661-3434
Contact: K Niovitch
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
CA Los Alamitos
Scientific Devices West
IL Chicago
Ampol Svc & Eng
312-685-1350
MD Bethesda
Spectro Sales
MA Norwell
Bordewieck Eng Sales
617-659-4915
MI Farmington
Anderson Electronics
313-476-9161
NJ Wayne
NLC Assoc
NC Charlotte
Jake Rudisill Assoc
704-377-6901
TX Houston
Data Marketing Assoc
214-661-0400
TX Dallas
Data Marketing Assoc

NOVATION INC
18664 Oxnard St
Tarzana, CA 91356
213-996-5060
Contact: A Nagy
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Automatic answering units
Branch Sales Offices:
NH Donbarton
Ken Busick
RFD 2 Barnard Hill Rd
603-224-7040

NOVELL DATA SYSTEMS INC
1170 N Industrial Pk Dr
Orem, UT 84057
801-226-8202
Contact: Robbie Mattson
■ Products & Services
DDP systems
Local networks
Microcomputer/ microprocessor systems
Programmable terminals
Video data terminals (KSR)
Local network software
Word processing packages

NUCLEAR ENGINEERING SERVICES CO
107 San Zeno Way
Sunnyvale, CA 94086
408-737-2080
Contact: S J Peluso
■ Products & Services
Value-added carriers
Acoustic couplers
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Teletypewriters
Selection & transfer equipment: patching equipment
Data communications consultants
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
NJ Cherry Hill
Nuclear Engrg Services Co
2 Executive Campus
609-663-1940

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

NU DATA CORP
32 Fairview Av
Little Silver, NJ 07739
201-842-5757
Contact: Dennis G Huyler
■ Products & Services
Line drivers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Data content monitors
Programmable terminals
Interactive terminals
Portable data entry terminals
Terminal controllers
Terminal interfaces
Automatic answering units
Automatic calling units
Code converters
Computer/communications interfaces
Protocol converters

OKIDATA CORP
111 Gaither Dr
Mt Laurel, NJ 08054
609-235-2600
Contact: Michael Del Vecchio
■ Products & Services
Disk drives, large
Remote line printers
Teleprinters, impact
Branch Sales Offices:
CA Santa Clara
Okidata Western Office
2374 Walshave
714-979-5490
CA Mt View
Eakins Assoc
999 Independence Ave
415-969-4533
CA Fountain Valley
MQI Computer Products
18381 Bandilier Cir
714-964-4722
CO Denver
PLS Assoc Inc
7755 E Quincy Ave
303-773-1218
FL Maitland
Pen-Tech Assoc Inc
Box 1475
305-645-3444
IL North Brook
Kal-Tronics Corp
Bldg 12 425 Huehl Dr
312-291-1220
MA Wakefield
Data Engr Services
40 Bellevue Rd
617-245-6666
MI Farmington Hills
CMP Inc
23995 Freeway Park Dr
313-477-7700
MO Grandview
Digital System Sales Inc
4006 E 13 Tr
816-765-3337
NJ Maplewood
Graydon Assoc
2062 Millburn Ave
201-467-1401
NY Fayetteville
Seneca Data Dist
104½ Clinton
315-637-9861
NY Jericho
Electro Rep Inc
366 N Broadway
516-938-0540
PA Montgomeryville
Robec Inc
Rt 309
215-628-4960
VT Fairfax
Scientific Associates Inc
9512A Lee Hwy
703-385-0600
WA Seattle
Datec Inc
364 Upland Dr
206-575-1470

OMNITEC DATA
2405 S 20th St
Phoenix, AZ 85034
602-258-8244
Contact: David L Maggiano
■ Products & Services
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Cables, electrical prefabricated extending
Switches, data communications: automatic
Data communications consultants
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Los Alamitos
IPI Industries
5152 Katella Ave
213-594-4791
CA Novato
Edward T Driscoll
180 Montura Way
415-883-0353
CA Irvine
Trikor Data Systems
2091 Business Ctr Dr
714-851-2028
FL St Petersburg
SEA Inc
9700 Koger Blvd
813-577-7700
IL Rolling Meadows
Sumer Inc
1675 Hicks Rd
312-991-8500
MI Milford
Milford Scientific
3269 Ledgewood Ct E
313-685-8912
MN Chanhassen
Professional Mrk Serv
7811 Great Plains Blvd
612-934-5939

NY White Plains
Cane Technical Sales Inc
22 Corporate Park Dr
914-694-9240

OH Dayton
Scientific Devices/Ashby & Assoc
4130 Linden Ave
513-252-5627

OK Tulsa
Barry Sales Inc
3035 E Skelly Dr
918-749-7775

TX Richardson
Barry Sales Inc
709 Lingco Dr
214-234-0255

TX Houston
Barry Sales Inc
6400 Westpark
713-784-5860

WA Seattle
Ben/Dav Sales Inc
3204 N E 123rd
206-367-3437

WA Vancouver
Ben/Dav Sales Inc
2005 Broadway 12

ON-LINE SOFTWARE INT'L
65 Rt 4 E
River Edge, NJ 07661
201-488-7770
Contact: Richard Ward
■ Products & Services
Local network software
Data security devices: software security modules
Data communications consultants

ONTEL CORP
250 Crossways Park Dr
Woodbury, NY 11797
516-364-2121
Contact: Doug Wagner
■ Products & Services
DDP systems
Local networks
Microcomputer/ microprocessor systems
Disk drives, floppy
Disk drives, large
Disk packs
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
DDP systems software
Emulation packages
Local network software
Operating systems
Word processing packages
Computer/communications interfaces
Branch Sales Offices:

CA Tustin
Ontel Corp
17731 Irvine Blvd
714-851-3975

IL Oakbrook
Ontel Corp
222 Camden Ct
312-920-8540

NJ Cherry Hill
Ontel Corp
496 N Kings Hwy
609-482-1555

TX Arlington
Ontel Corp
2401 W Park Row Dr
817-275-8371

OPTELECOM INC
15940 Luanne Dr
Gaithersburg, MD 20877
301-948-4232
Contact: F Eggleston
■ Products & Services
Multiplexers, time division
Lightwave (fiber optic) systems
Modems, limited distance
Modems, broadband, super-group (to 230.4 kb/s)

OPTIMA DIV/SCIENTIFIC-ATLANTA
2166 Mountain Industrial Blvd
Tucker, GA 30084
404-939-6340
Contact: J LaBour
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:

AL Huntsville
Beacon Electronics
11309 S Memorial Pkwy
205-881-5031

AZ Scottsdale
Arcom Sales Co
7300 E Stetson Dr
602-947-5745

CA Santa Fe Springs
Scientific-Atlanta Inc
10039 Pioneer Blvd
213-949-9571

CA Tustin
XBX Sales Inc
18410 Irvine Blvd
714-832-2630

CA Los Altos
Frauman Assoc
289 San Antonio Rd
415-941-0660

CO Boulder
Front Range Mktg Inc
1531 Broadway
303-443-4780

FL Melbourne
Beacon Electronics
316 Laurie St
305-259-0648

FL Ft Lauderdale
Beacon Electronics
6842 NW 20 Ave
305-971-7320

FL Maitland
Beacon Electronics
Box 1278
305-647-3498

FL Clearwater
Beacon Electronics
2280 US Hwy 19 North
813-796-2378

GA Atlanta
Beacon Electronics
6135 Barfield Rd
404-256-9640

IL Arlington Heights
Diethert/Angel Co
2400 Oakton St
312-593-7600

KS Shawnee Mission
BC Electronic Sales
Box 12485
913-888-6680

KS Wichita
BC Electronic Sales
6405 E Kellogg
316-684-0051

MD Randallstown
Beacon Electronics
8513 Lucerne Rd
800-336-3747

MA Lexington
Zieco Inc
18 Muzzey St
617-861-8300

MI Southfield
L H Dickelman Co
24301 Telegraph Rd
313-353-8210

MO St Louis
B C Electronic Sales
St Louis
314-895-4577

NJ Fair Lawn
Scientific Atlanta Inc
2100 Route 208
201-791-6455

NY Rochester
Ossmann Component Sales Corp
280 Metro Pk
716-424-4460

NY Syracuse
Ossmann Component Sales Corp
154 Pickard Bldg
315-455-6611

NC Greensboro
Beacon Electronics
1207 W Bessemer Ave
919-275-9997

OH Cleveland
C A Robinson Co Inc
5010 Mayfield Rd
216-381-9049

OH Dayton
C A Robinson Co Inc
26 W Nottingham Rd
513-275-2412

TN Johnson City
Beacon Electronics
3201 Hanover Dr
615-282-2421

TX Garland
Carey McMahill & Zerbe Co
Box 2804
214-681-1414

TX Houston
Carey McMahill & Zerbe Co
Box 35515
713-771-1500

UT Sandy
Front Range Mktg Inc
1811 E 9880 St
801-943-0402

VA Lynchburg
Beacon Electronics
309 Bedford Springs Rd
800-572-0405

VA Falls Church
Beacon Electronics
7115 Leesburg Pike
800-336-3747

WA Seattle
J J Backer Co
Box 9327
206-285-1300

ONTARIO, CANADA
Mississauga ON
Scientific Atlantic Ltd
1640 Bonhill Rd
416-677-6555

ISRAEL
Tel Aviv
Racom Electronics Co Ltd
60 Pinkas St
03-453151

REPUBLIC OF CHINA
Taipei
Syscom Computer Eng Co
Box 48-130
02-7026284

SCOTLAND
Macmerry East Lothian
Optima Enclosures Ltd
Great No Rd
Tranent 0875-610747

PACIFIC CYBER/METRIX INC
6800 Sierra Court
Dublin, CA 94566
415-829-8700
Contact: T J Netoff
■ Products & Services
Add-on main memory
Add-on auxilliary memory
Disks, floppy
Computer/communications interfaces
Branch Sales Offices:
CA San Jose
Datarep
97 Boston Ave
408-279-1212
IL Des Plaines
Coombs Assoc
1001 E Touhy
312-298-4830
MA Needham
J J Wild Co
163 Reservoir St
617-444-2366
NM Las Cruces
Sota Reps
323 First National Tower
505-523-4480
PA Glenside
Wyncote Instrumentation
2689 Limekiln Pike
215-572-6500
WA Bellevue
Tasco
606 110th Ave NE
206-453-1414

PACIFIC SOFTWARE
2608 Eighth St
Berkeley, CA 94710
Contact: J C Dvorak
■ Products & Services
Emulation packages
Transport software
Access program
Operating systems

PACNET CORP
2732 Seelcco St
Dallas, TX 75235
214-353-0396
Contact: Gil Williams
■ Products & Services
Message (including telegraph) carriers
Specialized carriers
Value-added carriers
Lease and resale organizations
Branch Sales Offices:
CA San Francisco
George Kelly
560 Commercial
415-391-1704
CA Los Angeles
Jerry Ritter
417 S Hill St
213-617-7769

PAGE COMMUNICATIONS ENGINEERS INC
801 Follin Ln
Vienna, VA 22180
703-938-4000
Contact: Duane T Bluhm
■ Products & Services
Earth stations
Lightwave (fiber optic) systems
Network management centers
Technical control centers
Cables, lightwave (optical fiber)
Computer/communications interfaces
Fire detection/protection equipment
Data communications consultants
Network simulation services

Stay up-to-date with new catalog information and new product announcements.
Turn to **UpDate Service Card, page 201.**

PANAFAX CORP
185 Froehlich Farm Blvd
Woodbury, NY 11797
516-364-1400
Contact: Robert Siegler
■ Products & Services
Facsimile terminals
Interactive terminals
Automatic answering units
Automatic calling units
Data security devices: personal identification systems
Paper for terminals
Branch Sales Offices:
CA Anaheim
Panafax Corp
1717 S St College Blvd
714-937-0436
IL Lombard
Panafax Corp
704 Oak Creek Dr
312-932-7650

PARADYNE CORP
8550 Ulmerton Rd
Largo, FL 33540
813-530-2000
Contact: Peter Vosotas
■ Products & Services
Concentrators
Line sharing units
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Port sharing units
Remote network processors
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
MIL 188C adapters
Response-time monitors
Network management centers
DDP systems
Local networks
Local network interfaces
Minicomputers
Teleconferencing networks
Batch terminals
Data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Terminal interfaces
Automatic answering units
Automatic calling units
Data access arrangement devices
Data security devices: encoder/decoders
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Voice adapters
Voice digitizers
Branch Sales Offices:
CA Garden Grove
Paradyne Corp
12792 Valley View
714-894-7526
GA Atlanta
Paradyne Corp
2191 Northlake Pkwy
404-934-5590
MI Detroit
Paradyne Corp
29350 Southfield Rd
313-642-9920
NY Hackensack
Paradyne Corp
Two University Plaza
201-342-8100
WA Alexandria
Paradyne Corp
700 N Fairfax St
703-549-9214
ONTARIO, CANADA
Willowdale ON
Paradyne Corp
250 Consumers Rd
416-494-0453

PENRIL CORP
DATA COMMUNICATIONS DIV
5520 Randolph Rd
Rockville, MD 20852
301-881-8151
Advertising page 64
Contact: John D Familetti
■ Products & Services
Modem sharing units
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Modem eliminators
Network management centers
Branch Sales Offices:
AL Huntsville
W A Brown Instruments
Box 4560
205-883-8660
AZ Phoenix
PLS Associates
4001 N 31st Ave
602-279-1531
CA Mountain View
CSS Telecommunications Specialists
2680 Bayshore Frontage Rd
415-964-4335
CA Long Beach
CTI Data Systems
3480 E Spring St
213-426-7375
CA San Diego
CTI Data Systems
PO Box 90100

CO Denver
PLS Associates
7755 E Quincy Ave, T-9
303-773-1218

FL Atlanta
W A Brown Instruments
3871 NE Expwy
404-455-1035

FL Melbourne
W A Brown Instruments
Box 1406
305-723-0766

FL Orlando
W A Brown Instruments
Box 513
305-425-5505

FL Ft Walton Beach
W A Brown Instruments
107A Tupelo Ave
904-243-3189

GA Atlanta
W A Brown Instruments
3070 Presidential Dr
404-455-1035

IL Wheeling
Inter-Business Corporation
925 N Milwaukee Ave
312-459-8866

IA Marion
First Rep Co
RR Box 643
319-373-1177

KS Shawnee
Atech
Box 3334
913-268-9644

LA Mandeville
W A Brown Instruments
Box 786
504-626-9702

MD Bethesda
Bekr Industries
4801 Montgomery Ln
301-654-1434

MA Waltham
CSI Systems
235 Bear Hill Rd
617-890-0127

MI Ann Arbor
George Gerhard & Associates
2211 Jackson Ave
313-996-8077

MN Eden Prairie
First Rep Co
6420 Flying Cloud Dr
612-944-2097

NM Albuquerque
PLS Associates
4300 H Silver Ave
505-255-2330

NY Jericho
Electro-Rep
366 N Broadway
516-938-0540

NC Durham
W A Brown Instruments
128 Glendale Ave
919-682-2383

OH Columbus
George Gerhard & Assoc
1384 Grandview Ave
614-488-9751

OH Cuyahoga
George Gerhard & Associates
2112 Ohio Ave
216-920-9646

PA McMurray
George Gerhard & Assoc
110 Clubview Dr
412-941-5954

PA Media
S&S Klinetics S&S Division
9 W Third St
215-565-5388

SC Columbia
W A Brown Instruments
1234 St Andrew Rd
803-798-8070

TN Oak Ridge
W A Brown Instruments
132 Fairbank Rd
615-482-5761

UT Salt Lake City
PLS Associates
2520 S State St
801-466-8729

WA Bellevue
DPM
15935 NE 8th
206-747-3309

QUEBEC, CANADA
Willowdale
Vidasystems
200 Consumers Rd
514-288-2395

AUSTRALIA
Huntingdale
Email Ltd Relays Div
15-17 Hume St
544-8244

BOLIVIA
La Paz
Coasin Bolivia SRL
Casilla 7295
40962

CHILE
Casilla 16225 Correo-9
Latin Data
Holanda 1310 Santiago
42209-460205

ENGLAND
Herts EN89T1
Nolton Communications
Fieldings Rd Chesthunt
Walthom Cross 33555

FRANCE
Point Claire
F P Baudin
6600 Trans Canada Highway

INDIA
Bombay 400 02
Bali International
Mathuradas Estates Box 7059
53 50 76

KOREA REP (REP)
Seoul
Korea International Products Services
CPO Box 3858

KUWAIT
Kuwait
Sa'id Al-Daham Trading & Contracting
Box 22302
414890

MALAYSIA FED OF
Selangor
Syarikat Asean Saintifik SDN BHD
36A Jalan 20/16A Paramount Garden
03 775015

PHILIPPINES
Manila 2805
Alejandro Enterprises Inc
506 Republic Supermarket Bldg
40-46-39

SINGAPORE
Singapore 2056
Teledata Private
1593 Block 5071 Ang Mo Kio
4568491

SOUTH AFRICA
Boksburg 1460
Standard Telephone & Cables
Box 286
52-8311

TAIWAN
Taipei 104
Sun Moon Star
164 Min Shen East Rd
5818521-5

THAILAND
Bangkok 5
Orient Research
Third Floor KLM Bldg
38478

PERCEPTION TECHNOLOGY CORP
95 Cross St
Winchester, MA 01890
617-729-0110
Contact: L Foss
■ Products & Services
Audio response units

Branch Sales Offices:

CA Irvine
Trikor Data Systems
2091 Business Ctr Dr
714-851-2028

IL Lisle
Perception Technology Corp
4513 Lincoln Ave, Lincoln Ctr
312-852-9440

MD Potomac
Lawrence O'Brien Inc
11714 Charen Ln
301-258-1164

MN Minneapolis
R A E Assoc
7317 Cahill Rd
612-941-3221

MO St Johns
Mid-West Marketing Inc
3606 Woodson Rd
314-426-2500

NY Copiague
Digitelle Inc
21 Dixon Ave
516-842-8885

OH Columbus
Gerhard & Assoc
1384 Grandview
614-488-9751

TX Dallas
SCI Sales Inc
16990 Dallas Pkwy
214-931-1487

Want to receive announcements of new products? Turn to **UpDate Service Card, page 201.**

PERFORMANCE SOFTWARE INC
1009 Sycamore Sq
Midlothian, VA 23113
804-794-1012
Contact: David P Romig
■ Products & Services
Applications packages
Custom programs
Access program

PERGAMON INFOTECH LTD
Nicholson House; Maidenhead
Berkshire, SL6 1LD
England
0628 39101

PERIPHONICS CORP
4000 Veterans Memorial Hgwy
Bohemia, NY 11716
516-467-0500
Contact: Hugh A Gigante
■ Products & Services
Concentrators
Front-end processors
Message switchers
Remote network processors
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
Local networks
Minicomputers
Add-on main memory
Floppy disk recorders
Audio response units
Data entry terminals
Programmable terminals
Automatic answering units
Automatic calling units
Computer/communications interfaces
Switches, data communications: automatic
Maintenance organizations

Branch Sales Offices:
AZ Phoenix
Periphonics Corp
11056 N 23 Dr
602-944-2221
CA Irvine
Periphonics Corp
18662 MacArthur Blvd
714-833-8850
CA San Francisco
Periphonics Corp
1750 Montgomery St
415-434-3555
NC Charlotte
Periphonics Corp
501 Archdale Ave
704-525-9794
TX Dallas
Periphonics Corp
5520 LBJ Freeway
214-387-8955

PERITEK CORP-COMP TECH DIV
3014 Lake Shore Ave
Oakland, CA 94610
415-465-9000
Contact: T H Birchell
■ Products & Services
Remote network processors
Floppy disk recorders

PERKIN-ELMER
2 Crescent Place
Oceanport, NJ 07757
201-870-4712
Contact: W Thompson
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, statistical (intelligent)
Remote network processors
DDP systems
Minicomputers
Add-on main memory
Cartridge drives
Cassette drives
Disk drives, large
Tape drives, magnetic
Tape punch/reader, paper
Graphic display terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Data communications consultants

Branch Sales Offices:
AL Huntsville
Perkin-Elmer Data Systems
3313 Memorial Pkwy SE
205-881-3750
AZ Phoenix
Perkin-Elmer Data Systems
2323 E Magnolia
602-267-7799
CA Santa Clara
Perkin-Elmer Data Systems
3255 Scott Blvd
408-727-5540
CA San Diego
Perkin-Elmer Data Systems
9420 Farnham St
714-565-0602
CA San Francisco
Perkin-Elmer Data Systems
3 & Market Sts
415-543-2863
CA Inglewood
Perkin-Elmer Data Systems
11222 La Cienega
213-641-4881
CA Tustin
Perkin-Elmer Data Systems
17461 Irvine Blvd
714-544-9093
CO Denver
Perkin-Elmer Data Systems
8301 E Prentice Ave
303-773-2855
CT Bloomfield
Perkin-Elmer Data Systems
44 Winton Bury Mall
203-243-9595
FL Orlando
Perkin-Elmer Data Systems
7200 Lake Ellenor Dr
305-851-6962
GA Norcross
Perkin-Elmer Data Systems
510 Guthridge Ct
404-448-3310
IL Arlington Heights
Perkin-Elmer Data Systems
415 W Golf Rd
312-437-5120
LA Baton Rouge
Perkin-Elmer Data Systems
6461 Siegen Ln
504-293-3540
MD Rockville
Perkin-Elmer Data Systems
3206 Monroe St
310-984-4700
MA Waltham
Perkin-Elmer Data Systems
318 Bear Hill Rd
617-890-0557
MI Oak Park
Perkin-Elmer Data Systems
22150 Greenfield Rd
313-968-2777
MO St Louis
Perkin-Elmer Data Systems
760 Office Pkwy
314-569-1817
NJ Englewood Cliffs
Perkin-Elmer Data Systems
140 Sylvan Ave
201-947-2200
NJ Pennsauken
Perkin-Elmer Data Systems
North Park Dr
609-665-3966
NY Binghamton
Perkin-Elmer Data Systems
One Marine Midland Plaza
607-722-4233
NY Rochester
Perkin-Elmer Data Systems
120 Allens Creek Rd
716-442-6840
OH Euclid
Perkin-Elmer Data Systems
26250 Euclid Ave
216-731-3360
OK Tulsa
Perkin-Elmer Data Systems
9920 East 42nd St
918-664-7161
PA Pittsburgh
Perkin-Elmer Data Systems
1382 Old Freeport Rd
412-963-6575
TX Richardson
Perkin-Elmer Data Systems
1011 South Sherman St
214-669-4400
TX Houston
Perkin-Elmer Data Systems
5855 Point West Dr
713-995-5544
UT Salt Lake City
Perkin-Elmer Data Systems
5630 S Waterbury Way
801-272-8237
WA Bellevue
Perkin-Elmer Data Systems
515 116th Ave NE
206-455-0680
WI Brookfield
Perkin-Elmer Data Systems
1505 Sunnyside Rd
414-784-9596

PERLE SYSTEMS LTD
360 Tapscott Rd
Scarborough, ON M1B 2Y6
Canada
416-299-4999
Contact: B Campbell
■ Products & Services
Concentrators
Message switchers
Modem eliminators
Code/protocol conversion programs
Protocol converters
Switches, data communications: automatic

Branch Sales Offices:
CA Los Angeles
Ezra Mintz Associates Inc
8939 S Sepulveda Blvd
213-670-5410
OR Portland
Rush S Drake Associates
Box 8009
503-224-3145

PER SCI INC
12210 Nebraska Av
Los Angeles, CA 90025
213-820-7613
Contact: Robert F Allen
■ Products & Services
Disk drives, floppy

Branch Sales Offices:
NY Skaneateles
Per Sci Inc
3 Gayle Rd
315-685-3340

AUSTRALIA
Melbourne
Adaptive Electronics P/L
418 St Kilda Rd
03-267-6800

AUSTRIA
Scheydgasse
Burisch
A 1210 Wien
0 22-2-387638
ENGLAND
Bournemouth
Data Track Technology
West Howe Ind Estate
02016 6561/2
SWEDEN
Stockholm
Bita Elektronik Svenska AB
Sveavagan 49
08 319000

PERTEC COMPUTER CORP
12910 Culver Blvd
Los Angeles, CA 90066
213-822-9222
Contact: Fran Moynihan
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Minicomputers
Disk drives, floppy
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Maintenance organizations

PERTEC COMPUTER CORP
PERIPHERALS DIV
9600 Irondale Ave
Chatsworth, CA 91311
213-999-2020
Contact: Bob Lewis
■ Products & Services
Cartridge drives
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Educational services
Maintenance organizations
Branch Sales Offices:
AZ Scottsdale
BFA Corp
4426 N Saddlebag Tr
602-994-5400
CA Encino
Pertec Peripherals Div
17835 Ventura Blvd
213-996-1333
CA San Jose
Pertec Peripherals Div
675 N First St
408-297-6558
CA Irvine
Pertec Peripherals Div
17192 Gillette
714-540-8340
CO Denver
BFA Corp
12015 E 46 Ave;Campus Six
303-371-2422
FL Cocoa Beach
Pertec Peripherals Div
1325 N Atlantic Ave
305-784-5220
IL Oak Brook
Pertec Peripherals Div
2605 W 22nd St
312-920-9540
NH Nashua
Pertec Peripherals Div
4 Townsend W
603-883-2100
NM Albuquerque
BFA Corp
3705 Westerfield NE
505-292-1212
NM Las Cruces
BFA Corp
312 W Parker
505-523-0601
PA Bala Cynwood
Pertec Peripherals Div
111 Presidential Blvd
215-668-8240
TX Dallas
Pertec Peripherals Div
2300 Valley View Ln
214-620-1326
UT Salt Lake City
BFA Corp
395 Lawndale Dr
801-466-6522
BRITISH COLUMBIA, CANADA
W Vancouver
Tracan Electronics Western Ltd
1144 Millstream Rd
604-926-3411
AUSTRALIA
Bymble
Digital Electronics
Box 324
449-4400
AUSTRIA
Burisch GABH
Schegdgosse 31
BELGIUM
Bruxelles
Sait Electronics SA
Chaussee de Ruisbroek 66
376-20-30
BRAZIL
Rio de Janero
Globus Digital SA
Rua Isedio Rocha 1057
2123759
DENMARK
Naerum
SC Metric A/S
Skodsborgvej 305
02-80-4200
ENGLAND
Reading
Pertec Peripherals Div
10 Portman Rd
UK-734-582115
FINLAND
Helsinki
Finn Metric OY
Ahertajantie 60
470844
FRANCE
Meridon
Reptec
24 Boulevard Anatole Frana
534-76-47
GERMANY, WEST
Frankfurt am
Pertec Peripherals Division
Eichenstrasse 59
0-611-393340
HONG KONG
Hong Kong
Idealand Electronics
118-120 Austin Rd
369-2235
ISRAEL
Tel-Aviv
I S Information Systems
Box 43070
03-483261-2-3
ITALY
20146 Milano
Computer Technology Itala
Via Wenckelmann 2
2-423-9883
JAPAN
Tokyo
Marubun
8-1 Nihombashi
Odemmecho;2-Chome
Chuo-ku
03-662-8151
NETHERLANDS
The Hague
Nenimij B V
Laan Copes van; Cattenburch
76-78
70-469509
NEW ZEALAND
Takapuna Auckland
David Reid Data Products
3-5 Auburn St
499-197
NORWAY
Olso
Metric AS
Box 85
2-28-26-24
PHILIPPINES
Metro Manila
Summa Computer Corp
De la Rosa Corna Salcededt
85-42-36
SOUTH AFRICA
Transvaal
CSSL Ltd
Box 31497
724-9301
SPAIN
Madrid
Unitronics SA
Princesa 1
241-1496
SPAIN
Barcelona
Unitronics SA
Infanta Carlota 74-78
239-2655
SWEDEN
Stockholm
Scandia Metric AB
Fack
08-820400
SWITZERLAND
Zurich
A Meyer & Co
Feldeggstraasse 26
01-474174
TAIWAN
Taipei
Multitech Intl Corp
977 Min Shen E Rd
7681232

PHONE 1 INC
1011 River Ln
Loves Park, IL 61111
815-877-9008
Contact: Richard Newberry
■ Products & Services
Concentrators
Multiplexers, statistical (intelligent)
Digitized-voice processors
Microcomputer/ microprocessor systems
Tape, paper
Audio response units
Badge readers
Data entry terminals
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Computer/communications interfaces

Branch Sales Offices:
CA Granada Hills
Phone 1 Inc
13360 Meadow Wood Ln
213-368-6211
GA Savannah
Computer Systems & Supply
Box 23701
912-352-9372
HI Honolulu
Aloha Associates
1715 Kalakaua Ave
808-941-1574
IL Northbrook
Resource Data Systems
801 Skokie Blvd
312-564-5440
IN Indianapolis
Sukup & Cox Inc
2060 E 54 St
317-253-5501
MI Farmington
Carter McCormic & Peirce
23995 Freeway Park Dr
313-477-7700
MN St Paul
Howard A Cullen Associates
1595 Selby Ave
612-646-7371
NC Charlotte
Zelco Associates
Box 240744
704-523-2961
OH Fairview Park
Carter McCormic & Peirce
22650 Lorain Rd
216-779-5100
OH Dayton
Carter McCormic & Peirce
4977 Northcutt Rd
513-222-7700
PA Coopersburg
Pleasant Valley Assoc
RD1, Box 405
215-346-8684
PA Monroeville
Carter McCormic & Peirce
409 Beatty Rd
412-372-4415
TX Irving
Kemco Inc
Box 998
214-255-0537
WA Seattle
SJI Corporation
5950-6th Ave S
206-763-8981
WI Brookfield
Siegfried Krauss Associates
1410 Shawnee Pass
414-786-8873
ISRAEL
Ramat Gan
International Peripheral Equipment Corp
Box 1803
72-40-73

PIICEON INC
INTELLIGENT SYSTEMS DIV
2350 Bering Dr
San Jose, CA 95131
408-946-8030
Contact: Arnold Gordon
■ Products & Services
Microcomputer/ microprocessor systems
Data entry terminals
Programmable terminals
Interactive terminals
Video data terminals (KSR)
Word processors, communicating
Word processing packages

PLANTRONICS/SANTA CRUZ
Box 635
Santa Cruz, CA 95061
408-426-5858
Contact: P W Senory
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Video data terminals (KSR)
Branch Sales Offices:
CA Santa Cruz
Plantronics
345 Encinal St
408-426-5858
CA Fremont
Plantronics
2450 Peralta Blvd
415-928-8388
FL Brandon
Plantronics
Box 1272
813-681-7739

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

PLESSY PERIPHERAL SYSTEMS
1691 Browning Ave
Irvine, CA 92714
714-540-9945
Contact: Glen Nicell
■ Products & Services
Front-end processors
Remote network processors
DDP systems
Minicomputers
Cartridge drives
Cassette drives
Disk drives, floppy
Disk drives, large
Tape drives, magnetic
Data entry terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Maintenance organizations
Branch Sales Offices:
CA Westminster
Plessy Peripheral Systems
13812 Golden West
714-895-1811
MA Waltham
Plessy Peripheral Systems
460 Totten Pond Rd
617-890-2654
MN Minneapolis
Plessy Peripheral Systems
8120 Penn Ave S
612-881-0190
TX Dallas
Plessy Peripheral Systems
4300 Alpha Rd
214-387-0229
ONTARIO, CANADA
Mississauga
Plessy Peripheral Systems
6291 Dorman Rd
416-677-5410

POINT-4 DATA CORP
2569 McCabe Way
Irvine, CA 92714
714-754-4114
Contact: Robin T Ollivier
■ Products & Services
Multiplexers, statistical (intelligent)
Minicomputers
Computer/communications interfaces
Branch Sales Offices:
NY New York
POINT-4 Data Corp
One Penn Plaza
212-244-0990

POLYMORPHIC SYSTEMS
460 Ward Dr
Santa Barbara, CA 93111
805-967-2351
Contact: Shirley Fullilove
■ Products & Services
Modem sharing units
Error rate detectors
Add-on main memory
Cassettes
Disks, floppy
Graphic display terminals
Interactive terminals
Operating systems
Furniture, cabinets, terminal enclosures

POLY-OPTICAL PRODUCTS INC
1815 E Carnegie Ave
Santa Ana, CA 92705
714-957-9288
Contact: Richard A Demmer
■ Products & Services
Lightwave (fiber optic) systems
Cables, lightwave (optical fiber)

POWERTEC INC
20550 Nordhoff St
Chatsworth, CA 91311
213-882-0004
Contact: Sherrill N Milner
■ Products & Services
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AL Huntsville
Murcota
904 Bob Wallace Ave
205-539-8476
AZ Scottsdale
Thom Luke Sales
2940 N 67th Pl
602-941-1901
AR Austin
Bonser-Philhower
8330 Burnet
512-458-3569
CA Chatsworth
Powertec
20550 Nordhoff St
213-882-0004
CA San Jose
Powertec
1798 Technology Dr
408-279-0701
CO Englewood
Thorson Rky Mtn
7076 S Alton Way
303-779-0666
CO Englewood
Tecnimat
500 Grand Ave
201-569-4200

CO Englewood
Captech
15 Rockridge Rd
513-836-0951

CT North Haven
Pat Jenks
52 Washington Ave
203-239-6201

FL Altamonte Springs
EIR Inc
701 E Semoran Blvd
305-830-9600

IL Chicago
Dave Dolin Sales
6232 N Pulaski Rd
312-286-6200

IN Carmel
Captech
1717 E 116th St
317-844-4175

MD Landover
Data Systems
8401 Corporate Dr
301-577-3700

MI Farmington Hills
Captech
23995 Freeway Park Dr
313-477-7700

MN Blommington
Northport Engineering
7837 12th Ave S
612-854-5556

MO Florissant
Midtec
110 S Hwy 67
314-837-5200

NV San Jose
Powertec
1798 Technology Dr
408-279-0701

NV Scottsdale
Thom Luke Sales
2940 N 67 Pl
602-941-1901

NJ Haddonfield
G L Williams
805 Hopkins Ave
609-428-6060

NY Mendon
Tech Mark Inc
Box 173
716-624-3840

NC Winston-Salem
Murcota
1106 Burke St
919-722-9445

PA Pittsburgh
Captech
400 Beatty Rd
412-372-4415

TX Dallas
Bonser-Philhower
13777 N Central Expwy
214-234-8438

WA Bellevue
Al Smith Co
405 166th SE
206-746-6770

PRACTICAL AUTOMATION INC
Trap Falls Rd
Shelton, CT 06484
203-929-5381
Contact: W Szturma
■ Products & Services
Teleprinters, impact
Teletypewriters

Branch Sales Offices:

CA Mountain View
Thorson Co
625 Ellis St
415-964-9300

CO Denver
Par Associates
3333 Quebec St
303-355-2363

CT Southbury
J J Wild Inc
Box 342
203-264-9494

GA Atlanta
Flex-Comm Inter
3379 Peachtree Rd NE
404-237-9242

IL Arlington Heights
Martec Assoc
2351 E Oakton St
312-956-8090

KS Shawnee Mission
Technical Sales Assoc
9421 Pflumm Rd
913-888-3330

MA Needham
J J Wild Inc
Box 382
617-444-2366

MI Detroit
R P Urban & Assoc
13468 Arnold St
313-535-2355

MI Grand Rapids
R P Urban & Assoc
Box 7391
616-245-0511

MN Apple Valley
Chris & Associates
184 Linden Cir
612-432-1823

MO St Louis
Technical Sales Assoc
119 Church St
314-725-5361

NJ Budd Lake
J J Wild Inc
9 Carson Rd
201-691-0441

NM Albuquerque
Par Associates
2403 San Mateo NE
505-881-5000

NY Jericho
J J Wild Inc
400 Jericho Tpke
516-935-6600

NY Clark Mills
KLM Assoc
46 Clinton St
315-853-6126

NY N Syracuse
KLM Assoc
401 S Main St
315-458-6214

NY Pittsford
KLM Assoc
111 Marsh Rd
716-381-8350

OH Cleveland
Electro Sales Assoc
851 E 222nd St
216-261-5440

OH Dayton
Electro Sales Assoc
1635 Mardon Dr
513-426-5551

PA Hatboro
QED Elect Inc
300 North York Rd
215-674-9600

PA Wyndmoor
J J Wild Inc
7902 Louise La
215-836-1441

PA Pittsburgh
Electro Sales Assoc
201 Penn Center Blvd
412-371-9449

TX Dallas
Glidden Electro Equip
11649 Chairman Dr
214-341-0610

TX Houston
Glidden Electro Equip
7728 Long Point Rd
713-681-1415

WA Bellevue
Tasco Inc
606 110 NE
206-453-1414

AUSTRALIA
Amcliffe, NSW
Electrical Equip
Box 210
42-1416

DENMARK
Annettevet
Aktieselskabet Oskar Pade

GERMANY, WEST
Munich
Datameg KG
8011 Putzbrunn
089-4-60-49-93

ITALY
Milano
Electronic S R L
Corso Sempione 60
31.33.64

JAPAN
Tokyo
Management Systems
Setagaya, Naka
704-5375

SOUTH AFRICA
Johannesburg
S'Electronics Ltd
Booysens 2016
838-2169

SWEDEN
Stockholm
Scantele AB
Tengdahlsgaten 24
46-8-24-58-25

SWITZERLAND
Bern
Studer Electronic AG
Lindenrain 3
031-23-20-62

PRECISION COMMUNICATIONS SERVICES INC
2609 DeLeon Street
Tampa, FL 33609
813-870-0362
Contact: Douglas R Kenny
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Data access arrangement devices
Data jacks and plugs
Lease and resale organizations
Maintenance organizations
Used equipment

Branch Sales Offices:
AL Montgomery
Source-Of-The-South
Box 2414
205-834-1294

PRECISION MONOLITHICS INC
1500 Space Park Dr
Santa Clara, CA 95050
408-727-9222
Contact: Stephen Pass
■ Products & Services
Pulse and signal regenerators
Voice digitizers
Branch Sales Offices:
CA Santa Clara
PMI
2700 Augustine Dr
408-727-6616
CA Los Angeles
PMI
6033 W Century Blvd
213-642-0142
IL Schaumberg
PMI
1325 Remington Rd
312-885-8440
MA Wayland
PMI
16 Boston Post Rd
617-655-8900

PRENTICE CORP
266 Caspian Dr
Sunnyvale, CA 94086
408-734-9810
Advertising page 61
Contact: Perry Lindberg
■ Products & Services
Multiplexers, frequency division
Multiplexers, statistical (intelligent)
Acoustic couplers
Line drivers
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Branch Sales Offices:
AL Huntsville
James L Highsmith & Co
2809 Triana Blvd SW
205-536-6666
AK Anchorage
John P Bagoy Associates
3210 Rampart Dr
907-274-8531
AZ Scottsdale
Thorson Desert States Inc
6560 N Scottsdale Rd
602-998-2444
AZ Phoenix
Thor Engineering
9010 North Combre Dr
602-867-1843
CA Encino
Prentice Corporation
16661 Ventura Blvd
213-990-0765
CA Los Angeles
The Thorson Co
520 S Sepulveda Blvd
213-476-1241
CA Goleta
The Thorson Co of So Calif
340 S Kellog Ave
805-964-8751
CA Irvine
The Thorson Co of So Calif
18009 Skypark Cir
714-557-4460
CA Alhambra
The Thorson Co of So Calif
624A N Garfield Ave
213-281-2280
CA Woodland Hills
Pacific Mountain States
6319-B De Sota Ave
213-999-2281
CA Torrance
Allen Edwards Associates
2808 Oregon Ct
213-328-9770
CA Long Beach
Allen Edwards Associates
1535 Termino Ave
213-597-1231
CA San Diego
Allen Edwards Associates
1735 Archer St
714-272-8144
CA Irvine
Allen Edwards Associates
17722 Palmento Way
714-552-7850
CA Thousand Oaks
Allen Edwards Associates
618 Valley Oak Ln
805-498-5413
CA Oakland
Consolidated Data Terminals
477 Roland Way
415-638-1222
CA Redondo Beach
Consolidated Data Terminals
2636 Manhattan Beach Blvd
213-970-1030
CA Mt View
CSS Telecommunications
2680 Bayshore Frontage Rd
415-964-4335
CA Los Angeles
The David Jamison Carlyle Corp
2049 Century Park E
213-277-4562
CA Newport Beach
The David Jamison Carlyle Corp
2709 Hillside Dr
714-640-0355
CA Los Angeles
Ezra Mintz Associates
8939 S Sepulveda
213-670-5410
CA San Diego
Ezra Mintz Associates
7841 Balboa Ave;Ste 104
714-565-4921
CA San Diego
The Thorson Co-San Diego
7841 Balboa Ave;Ste 108
714-292-5825
CA Santa Clara
Prentice Corporation
1333 Lawrence Expy
408-247-0661
CA Orinda
Applied Management Systems
88 Rheem Blvd
415-254-3838
CA San Jose
Backus Data Systems Inc
1440 Koll Circle
408-279-8711
CA Poway
Allen Edwards Associates
13035 Acten Ave
714-271-4132
CA Roseville
Comlink Inc
2238 McLaren Dr
916-786-3445
CA Mountain View
Data Comm & Systems Group
465 Fairchild Dr
415-966-8660
CA Mill Valley
Data Comm & Systems Group
104 Oakdale
415-388-5439
CA Los Angeles
David Jamison Carlyle Corp
2049 Century Park E
213-277-4562
CA Sacramento
Consolidated Data Terminals
701 Howe Ave
916-924-1644
CA Woodland Hills
The Supply Depot
6324 Variel Ave
213-992-6060
CO Englewood
Thorson Rocky Mountain Inc
7076 S Alton Way
303-779-0666
CO Englewood
The Hall Company
3039 Cornell Cirlce
303-789-4149
CO Englewood
Acorn Data Products
7304-L S Alton Way
303-779-6644
FL Boca Raton
James L Highsmith & Co
4190 NW Oak Cir
305-368-9194
FL Orlando
James L Highsmith & Co
2545 Industrial Blvd
305-293-5202
FL Miami Lakes
Networks
14560 NW 60th Ave
305-822-6750
GA Atlanta
Flex-Com International
3379 Peachtree Rd NE
404-237-9242
HI Honolulu
Territorial Electronics Inc
1221 Kapiolani Blvd
808-521-8724
HI Honolulu
David Jamison Carlyle Corp
677 Alamoana Blvd
808-531-5136
IL Chicago
H&H Sales Inc
2007 N Sedgwick
312-871-8250
IL Chicago
The David Jamison Carlyle Corp
4200 Marine Dr
312-975-1500
IN Indianapolis
H&H Sales Inc
3232 Bluebell Lane
317-297-1876
KY Louisville
Data Processing Sciences
3715 Bardstown Rd
MD Oxon Hill
Prentice Corp
6192 Oxon Hill Rd
301-839-6555

MD Silver Spring
Communications Products Inc
1110 Fidler Ln
301-589-2802

MD Silver Spring
Source Associates
10300 Nagler Rd
301-431-0587

MA Fairhaven
Data Brain
Box 161
617-994-3944

MA Brockton
Prentice Corporation
484 Pleasant St
617-588-0278

MI Brighton
Robert Lowry & Assoc
8163 W Grand River
313-227-7067

MI Grand Rapids
Lowry Associates Inc
3902 Costa NE
616-363-9839

MN St Paul
Dytec North Inc
1821 University Av
612-645-5816

MN Minneapolis
Bohlig & Associates
3440 Belt Line Blvd
612-922-7011

MO St John's
Mid-West Mktg
3606 Woodson Rd
314-426-2500

NJ East Orange
Friedman Assoc
134 Evergreen Pl
201-673-2500

NJ Mataman
David Jamison Carlyle Corp
550 Route 34
201-946-9669

NJ Bogota
Qytel
204 Leonia Ave
201-487-7737

NM Albuquerque
Data Handling Co
218 Manzano Av NE
505-268-4364

NC Charlotte
James L Highsmith & Co
1141 Hawthorne Rd
704-333-7743

OH Dayton
Robert Lowry & Assoc
2194 Hewitt Ave
513-435-7684

OH Cleveland
Robert Lowry & Assoc
1440 Snow Rd
216-398-0506

OH Columbus
Robert Lowry & Assoc
2765 Cleveland Ave
614-436-2051

OH Cincinnati
Data Processing Sciences
2327 Park Ave
513-961-0776

OH Cleveland
Data Processing Sciences
17534 Royalton Rd
216-572-1122

OH Toledo
Data Processing Sciences
3126 Sylvania Ave
419-472-0111

OH Dayton
Data Processing Sciences
3300 S Dixie Ave
513-294-2770

PA King of Prussia
J E Cuesta Co Inc
570 DeKalb Pike

PA Pittsburgh
Robert Lowry & Assoc
7 Parkway Ctr
412-922-5110

PA Philadelphia
Rohr Associates
7920 Louise Ln
215-836-2200

PA Huntington Valley
Lynbar Group Inc
3741 Richview Rd
215-947-3554

TX Dallas
Computer Marketing Corp
6750 Hillcrest Plaza Dr
214-934-1893

TX Houston
Computer Marketing Corp
8401 Westheimer
713-782-8290

UT Salt Lake City
Thorson Rocky Mountain
3691 W 1987 S
801-973-7969

VA Richmond
James L Highsmith & Co
2604-D Buford Rd
804-272-5888

VA Richmond
Product Management Corporation
12124 Garden Gate Rd
804-744-4925

VA Falls Church
Data Comm Systems Corp
254 N Washington St
703-241-7803

WA Seattle
Distributed Data Products
419 Occidental Ave S
206-625-1565

WA Redmond
Consolidated Data Terminals
14960 NE 31st Cir
206-883-0100

ECUADOR
Quito
Ingenieria De Sistemas Cia Ltda
Box 1038
527882

ENGLAND
Bronley, Kent
Feshon Systems Ltd
Walton House, 93/95 High St
01-464-4433

GERMANY, WEST
D-6232 Badsode/TS
Telemation GmbH
Bismarckstrasse #8
06196/27054

ENGLAND
Seoul
Oricom Inc
1084 Susong-Dong Chongro-Ku
70-7855/7

NETHERLANDS
5503HR Veldhover
Simac Electronics
Veenstraat 20
040-533725

PRIME COMPUTER INC
Prime Park
Natick, MA 01760
617-655-8000
Contact: Richard Sterry
■ Products & Services
DDP systems
Local networks
Minicomputers
Add-on main memory
Tape drives, magnetic
Data entry terminals
Interactive terminals
Remote job entry terminals
Teleprinters, impact
Video data terminals (KSR)
Video data terminals (RO)
Computer/communications interfaces
Maintenance organizations
Branch Sales Offices:

AL Huntsville
Prime Computer Inc
3315 S Memorial Pkwy
205-883-2120

AZ Phoenix
Prime Computer Inc
5125 N 16 St
602-264-4264

CA Irvine
Prime Computer Inc
2101 Business Center Dr
714-975-0262

CA Palo Alto
Prime Computer Inc
2479 E Bayshore Blvd
415-865-1990

CA Sacramento
Prime Computer Inc
8801 Folsom Blvd
916-381-8681

CA San Diego
Prime Computer Inc
4444 Camino del Rio S
714-293-7420

CA San Francisco
Prime Computer Inc
1 Market Plaza
415-543-9213

CA Tarzana
Prime Computer Inc
18321 Ventura Blvd
213-881-8433

CA Culver City
Prime Computer Inc
6089 Bristol Pkwy
213-417-5116

CA Woodland Hills
Prime Computer Inc
21052 Oxnard St
213-992-8633

CO Englewood
Prime Computer Inc
5970 S Syracuse St
303-773-1484

CT Stamford
Prime Computer Inc
3001 Summer St
203-357-9750

CT Hartford
Prime Computer Inc
18 Asylum St
203-525-9964

FL Orlando
Prime Computer Inc
6900 S Orange Blossom Trail
305-855-0040

FL Miami
Prime Computer Inc
Dadeland Towers Suite 520; 9400
S Dadeland Blvd
305-666-3433

FL Jacksonville
Prime Computer Inc
The Deerwood Bldg; 7898 Baymeadows Way
904-855-5348

GA Atlanta
Prime Computer Inc
5801 Peachtree Dunwoody Rd
404-252-8900

IL Oak Brook
Prime Computer Inc
2803 Butterfield Rd
312-920-6750

IL Schaumburg
Prime Computer Inc
One Woodfield Lake
312-885-8466

IN Carmel
Prime Computer Inc
11550 N Mendian
317-884-7500

KY Louisville
Prime Computer Inc
Starks Bldg; 455 River City Mall
502-585-2419

LA Metairie
Prime Computer Inc
1 Lakeway Ctr; 3900 N Causeway Blvd
504-837-1240

MD Rockville
Prime Computer Inc
1600 Research Blvd; Tower 1
301-251-0250

MA Framingham
Prime Computer Inc
1 Speen St
617-872-4470

MI Grand Rapids
Prime Computer Inc
1550 E Biltmore Ave SE
616-957-1150

MI Troy
Prime Computer Inc
755 W Big Beaver
313-362-0050

MI Dearborn
Prime Computer Inc
Garrison Place West; 19855 Outer Dr
313-562-8100

MN Bloomington
Prime Computer Inc
2950 Metro Office Dr
612-854-5976

MO St Louis
Prime Computer Inc
1810 Craig Rd
314-576-0010

NJ Mountainside
Prime Computer Inc
240 Sheffield St
201-654-6270

NM Albuquerque
Prime Computer Inc
4501 Indian School Rd

NY Albany
Prime Computer Inc
1 Corporate Plaza
518-459-5330

NY New York
Prime Computer Inc
405 Lexington Ave
212-687-6670

NY Rochester
Prime Computer Inc
300 White Spruce Blvd
716-442-8690

NY Melville
Prime Computer Inc
534 Broad Hollow Rd
516-752 7055

NC Greensboro
Prime Computer Inc
2303 W Meadowview Rd; Kingston Bldg
919-292-0643

OH Cincinnati
Prime Computer Inc
8160 Corp Pk Dr
513-891-8333

OH Middleburg Heights
Prime Computer Inc
1600 Sprague Rd
216-243-4900

OH Worthington
Executive Center Ltd
6797 N High St
614-885-4644

OK Tulsa
Prime Computer Inc
Koger Executive Ctr; 9717 East 42nd St
918-664-8769

OR Portland
Prime Computer Inc
9400 SW Barnes Rd
503-223-7165

PA Camp Hill
Prime Computer Inc
209 Senate Ave
701-763-7961

PA Bridgeville
Prime Computer Inc
1225 Washington Pike
412-257-0991

PA Wayne
Prime Computer Inc
151 S Warner Rd
215-687-8030

PA Camp Hill
Prime Computer Inc
209 Senate Ave
717-763-7961

TN Nashville
Prime Computer Inc
One Plus Exec Offices; 295 Plus Park Blvd
615-361-6065

TN Knoxville
Prime Computer Inc
9047 Exec Park Dr

TX Austin
Prime Computer Inc
313 E Anderson Ln
512-458-8216

TX Dallas
Prime Computer Inc
5001 LBJ Frwy
214-233-6091

UT Salt Lake City
Prime Computer Inc
4455 South 700 East
801-262-9953

VA Hampton
Prime Computer Inc
2101 Exec Dr
804-827-9164

WA Bellevue
Prime Computer Inc
1603 116 St NE
206-455-0774

WA Richland
Prime Computer Inc
1200 Jadwin Ave
509-943-8425

WA Spokane
Prime Computer Inc
North 2128 Pines Rd
509-922-3656

WI Milwaukee
Prime Computer Inc
735 North Water St

ONTARIO, CANADA
Rexdale
Prime Computer of Canada Ltd
27 Enterprise Rd
416-249-7251

ARGENTINA
Omaha
Prime Computer Inc
Embassy West; 9140 W Dodge Rd
402-391-1414

AUSTRALIA
New South Wales
Santa Cruz
15 Blue St
02-929-0044

AUSTRIA
Austria
Prime Computer Ges MBH
Schulgasse 59
222-439-287

BELGIUM
Brussels 1140
Prime Computer Benelux BV
Genevestraat 10 B3

BOLIVIA
Santa Cruz
Ingenierios de Sistemas Ltda
Caasilla Correo 1483;D'orbigny 75
519-33-26648

CHILE
Santiago
Data Comp Ltda
Computacion e Informatica;Box 6055 Correo 22
227564

COLOMBIA
Bogota
Procalculo SA
Carrera 7 No 74-09 Piso 6
2-35-388

DENMARK
Copenhagen
Prime Computer Scandinavia AB
2600 Glostrop
02-455430

ECUADOR
Quito
Comre Secor
Avenida Amazonas 1001
593-2-520-458

ENGLAND
Hounslow Middlesex
Prime Computer (UK) Ltd
1 Lampton Rd
01-572-6241

FRANCE
Paris
Prime Informatique
33 Rue Fernand Forest
0772-9117

GERMANY, WEST
Wiesbaden
Prime Computer GmbH
348 Gustav Stresemann Ring 12-16
06121-3611

GREECE
Athens
American Computer Systems Ltd
Dionisiou Areopagitou 7
30-1-922-8735

HONG KONG
Wanchai
Sino-American Electric & Educational Development Inc
2101 Wah Kwong Bldg; 48-62 Hennessy
852-5-276-001

INDIA
Bombay
International Data Management Pvt Ltd
Express Towers; Nariman Point
231-179

ISRAEL
Tel-Aviv
Systematics Ltd
18 Rival St
972-3-330-250

ITALY
Milan
Encodex SPA
Piazzale Bian Camano 1
2-316333

JAPAN
Tokyo
Prime Computer Japan Inc
4-30 Roppongi 1-Chome Minatu-Ku
81-3-586-9669

KOREA REP (REP)
Seoul
Korea Computer Center
8-61 Galwog-Dong
793-8061

KUWAIT
Salmiah
Diyar United Trading & Contracting Co
Jabreiha, Tunis St; Yousufi Bldg
965-552699

MEXICO
Mexico 12 DE
Info Computadoras SA de CV
Manzanas No 2 Penthouse
535-559-8793

NETHERLANDS
The Netherlands
Primee Computer Benelux BV
2715 CA Zoctermeer
79-510061

NEW ZEALAND
Parnell Auckland
Prime Computer of New Zealand
Box 37 060
64-9-544-073

NIGERIA
Lagos
Universal Computers Ltd
9 Agard St Box 5715

NORWAY
Oslo
Prime Computer Scandinavia AB
1346 Gjettum
02-544326

PERU
Lima
Sucesa SA
Leonidas Yerovi 882; San Isidro
416-858

SAUDI ARABIA
Al Khobar
Moammer Bros Foundation
Box 907
966-3-864-1932

SCOTLAND
Glasgow
Prime Computer Inc
141 W Nile St
041-332-2248

SINGAPORE
Singapore
Total Computer Systems (S) Pty Ltd
50 Kallang Bahru
65-293-4401

SO. W. AFRICA (NAMIBIA)
Joahannesburg
Central Data Systems Ltd
CDS House;Corner Marshall & Gold Sts
29-2761

SPAIN
Madrid
Prime Computer Iberica SA
Infanta Mercedes 90
457-4200

SWEDEN
Stockholm
Prime Computer Scandinavia AB
S 17154 Solna
08-987595

SWITZERLAND
Zeurich
Prime Computer AG
Rautistrasse 12
41-1-42-4444

TAIWAN
Taipei
First International Computer Inc
201 Tung Hwa North Rd
731-4473/4

PRINTER SYSTEMS CORP
1 W Deerpark Rd #104
Gaithersburg, MD 20760
301-840-1070
Contact: Sam Swamy
■ Products & Services
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Branch Sales Offices:
GA Marietta
Printer Systems Corp
Box 7203
404-973-6517
PA Pittsburgh
Printer Systems Corp
Box 12863
412-854-2311

PRINTER TERMINAL COMMUNICATIONS CORP
124 Tenth Street, Box 535
Ramona, CA 92065
714-789-5200
Contact: George Davenport
■ Products & Services
Front-end processors
FM systems
Local networks
Teleprinters, impact
Computer/communications interfaces
Branch Sales Offices:
AZ Mesa
Tekcom, Inc
2306 East Glade Ave
602-892-6133
CA Huntington Beach
Tekcom, Inc
Box 5902
714-968-1240
CO Lakewood
Rocky Mountain Micro Sys, Inc
10488 W 6th Pl
303-232-4545
FL Jacksonville
Advanced Communications, Inc
1625 Emerson St
904-398-2966
FL Jacksonville
Tradex International
Box 5031
904-737-0662
FL Orlando
Daxko of America, Inc
6220 So Orange Blossom Trail
305-855-7162
FL Miami Lakes
Networks, Inc
14560 NW 60th Ave
305-822-6750
IL Chicago
Exellent Software Inc
175 E Delaware Pl, Box 1167
312-787-4280
LA Kenner
Phoenix/6 Computer Corp
Box 481
504-467-0220
MD Potomac
Nilson Research Corp
8725 Belmart Rd
301-299-7875
TX Houston
Venture Computing Co
5555 West Loop South
713-668-3448

PRINTRONIX INC
17421 Derian Ave PO Box 19559
Irvine, CA 92713
714-549-7700
Contact: Pete Craig
■ Products & Services
Remote line printers
Branch Sales Offices:
AL Huntsville
Gentry Assoc
2109 W Clinton Av
205-534-9771
AZ Scottsdale
OEM Specialties
6900 E Camelback Rd
602-941-5646
CA Sunnyvale
Group III Electronics
542 Lakeside Dr
408-245-4392
CA Redondo Beach
FL Jacksonville
2615 Manhattan Beach Blvd
213-973-7844
CA San Diego
Group III Electronics
7263 Engineer Rd
714-292-0525
CO Denver
Par Assoc
10515 E 40th
303-371-4140
FL Orlando
Gentry Assoc
7665 Currency Dr
305-859-7450
GA Rosewell
Gentry Assoc
9800 Grimes Bridge Rd
404-998-2828
IL Arlington Heights
Dytec/Central
315 W University
312-394-3380
IN Indianapolis
Dytec/Central
25 Beechway Dr
317-247-1316

IA Iowa City
Dytec/Iowa
Box 2148
319-683-2282

KS Lenexa
Dytec/South
8245 Nieman Rd
913-888-0215

KY Dayton
Lowry & Assoc Inc
2194 Hewitt
513-435-7684

LA Gretna
Gentry Assoc
1799 Stumpf Blvd
504-367-3975

MD Gaithersburg
Mesa Inc
16021 Industrial Dr
301-948-4350

MA Lowell
S & S Electronics Inc
80 Stedman St
617-458-4100

MI Brighton
Lowry & Assoc
8163 W Grand River
313-227-7067

MN St Paul
Dytec/North
1821 University Av
612-645-5816

MO Maryland Heights
Dytec/South
11657 Adie Rd
314-569-2990

NJ Ft Lee
Technical Marketing Assoc
2460 Lemoine Ave
201-224-6911

NM Albuquerque
BFA Corp
1704 Moon SE
505-292-1212

NM Las Cruces
BFA Corp
Box 1237
505-524-9693

NY North Syracuse
Naco Electronics Corp
Box 276
315-699-2651

NC Burlington
Gentry Assoc
1336 S Church St
919-227-3639

OH Cleveland
Lowry & Assoc Inc
1440 Snow Rd
216-398-0506

OH Dayton
Lowry & Assoc Inc
2194 Hewitt
513-435-7684

OR Portland
Pacific Northwest Electronics
2035 SW 58
503-297-8056

PA Ambler
Denco Data Equip
25 Skippack Pike
215-542-9876

PA Pittsburgh
Lowry & Assoc
Seven Parkway Ctr
412-922-5110

TX Dallas
US Data Assoc Inc
14241 Proton Rd
214-661-9633

TX Houston
US Data Assoc Inc
4120 A-Directors Row
713-681-0200

TX Austin
US Data Assoc Inc
8701 Shoal Creek Blvd
512-454-3579

WA Bellevue
Pacific Northwest Electronics
2020 116th NE
206-454-0150

ONTARIO, CANADA
Rexdale
Ahern & Soper
31 Enterprise Rd
416-245-4848

QUEBEC, CANADA
Dorval
AES
PO Box 2088
514-634-7151

QUEBEC, CANADA
Systems Technology Services
9577 Cote Liesserd
514-631-7292

ARGENTINA
Buenos Aires
Contel
Senillosa 173
54-1-906-486

AUSTRALIA
Artarmon NSW
I O Peripheries Pty Ltd
457 Pacific Highway
61-2-427-3555

AUSTRIA
Vienna
Plessey Ges Mbh
Rotenturm Str 25
432 22 634 575

BELGIUM
Brussels
C N Rood S A
37 Place de Jamblinne de meux
322-735-2135

DENMARK
2000 Kobenhaven
Sun Corp International
Finsensvej 39A
451-878-888

ENGLAND
Edgeware, Middlesex
Pragma Ltd
29 High St
441-952-8471

FRANCE
Courbevoie
Impression Enregistrement des Resultats
12, Rue de Sebastopol
334-30-20

GERMANY, WEST
Altheim
Computer OEM Trading GmbH
45 Kirchstrasse
496-105-75-590

GREECE
Piraeus
Flame Computer Printers Inc
Akti Miasuli 67
301-452-6538

ISRAEL
Ramat-Gan
International Peripheral Equipment Ltd
Box 1803
972-3-724073

ITALY
Milano
SEGI s r L
Via Timavo
392-670-9130

JAPAN
Tokyo
Y E Data Inc
1-1 Higashi-Ihibukuro 3-Chome Toshimo-ku
81-3-989-8001

MEXICO
Despacho, Naucalpon, EDD
BPM de Mexico S A
Blvd M Avila Camacho 40
905-557-6125

NETHERLANDS
Rijswijk
C N Rood B V
Box 42
3170-996360

NEW ZEALAND
Wellington
Datacom Equipment Ltd
89 Courtnay Place
64-4-857-769

NORWAY
N-1371 Asker
Teleinstrument A B
Box 134
472 789 460

SOUTH AFRICA
Braamfontein
Datakor Pty Ltd
CNR Smit & De Beer Sts
27-51-724-3511

SPAIN
Barcelona
Hardware & Software
Milanesado, 1 Bis
34-3-204-2099

SWEDEN
Vallingby
Teleinstrument AB
Box 490
46-8-380-370

SWITZERLAND
Dubendorf
Rodata
Usterstrasse 120
41-1-8201613

PRO-LOG CORPORATION
2411 Garden Rd
Monterrey, CA 93940
408-372-4593
Contact: Sales Dept
■ Products & Services
Front-end processors
Message switchers
Remote network processors
Local networks
Microcomputer/ microprocessor systems
DDP systems software
Local network software
Transport software
Furniture, cabinets, terminal enclosures
Educational services
Branch Sales Offices:

CA Garden Grove
Advanced Digital Group
12062 Valley View St
213-598-9645

IL Rolling Meadows
System Engineering Associates
1225 Carnegie St
312-255-4820

MA North Reading
Martindale Associates
212 Main St
617-942-0514

PROMPT COMMUNICATION CORP
717-A Lakefield Rd
Westlake Village, CA 91360
805-497-9981
Contact: Tom E Rowley
■ Products & Services
Message switchers
Teleprinters, impact
Video data terminals (KSR)
Data communications consultants

PROTOCOL COMPUTERS INC
6430 Variel Ave #107
Woodland Hills, CA 91367
213-716-5500
Contact: Richard L Swarz
■ Products & Services
Protocol analyzers
Protocol converters
Data communications consultants

PULSECOM DIV/HARVEY HUBBELL
5714 Columbia Pike
Falls Church, VA 22041
703-998-4300
Contact: Michael W Vinocur
■ Products & Services
Line sharing units
Port sharing units
Line drivers
MIL 188C adapters
Data access arrangement devices
Protocol converters
Branch Sales Offices:
FL Brandon
Pulsecom Div/Harvey Hubbell
614 Overland Dr
813-685-7588
KS Overland Park
Pulsecom Div/Harvey Hubbell
9114 West 88th St
913-381-6163
NV Reno
Pulsecom Div/Harvey Hubbell
12485 Overbrook Dr
702-853-8099
OH Harpster
Pulsecom Div/Harvey Hubbell
Route 1 Box 32-A
513-642-9349
TX Carrollton
Pulsecom Div/Harvey Hubbell
1935 Chesham Dr
214-492-2763

PYROTRONICS
8 Ridgedale Ave
Cedar Knolls, NJ 07927
201-0267-1300
Contact: Harry Lein
■ Products & Services
Data security devices: encoder/decoders
Data security devices: personal identification systems
Fire detection/protection equipment
Branch Sales Offices:
CA Denver
Pyrotronics
5711 N Logan St
303-573-6133
GA Atlanta
Pyrotronics
3070 Presidential Dr
404-451-5405
IL Elmhurst
Pyrotronics
490 Wrightwood Ave
312-279-4604
NY Long Island City
Pyrotronics
40-01 29th St
212-784-7676

QANTEL
(See MDS/Qantel listing)

QANTEX DIVISION
60 Plant Ave
Hauppauge, NY 11787
■ Products & Services
Cartridge drives

Q E D INFORMATION SERVICES INC
180 Linden St
Wellesley, MA 02181
617-237-5656
Contact: Stewart Stokes Jr
■ Products & Services
Educational services
Branch Sales Offices:
IL St Charles
Wilbert Galitz
4 N 961 Stonebridge
312-377-0962
NY New York
Q E D
150 Nassau St
212-732-0107
TX Arlington
Michael Troxell
Univ of Texas-Branch Box 19197
817-273-2288

QI CORP
125 Ricefield Lane
Hauppauge, NY 11788
516-543-7800
Contact: Carolyn White
Branch Sales Offices:
FL Hollywood
Alpha-Merics Inc
2128 Harrison St
305-925-8188
IL Bridgeview
Sahara Technology Inc
9250 S Harlem Ave
312-430-4353
MD Columbia
BRM Systems
9030 Route 108
301-997-5500
OH Seven Hills
Sava Sremac
5802 Rockhaven Dr
216-741-0890
AUSTRALIA
Lan Cove, NSW
Kalamazoo Australia Ltd
Kalamazoo Center, 12 Mars Rd
HONG KONG
Central Hong Kong
QI Pacific
2205 New World Tower, 16-18 Queens Rd
INDONESIA
Jakarta
C V Jakarta Office Equipment
JLN Kali Besar, Timur No 27K, Box 543/DAK
JORDAN
Amman
Baird Communications
Box 6401

For further catalog information, turn to **UpDate Service Card, page 201.**

MEXICO
Col Anzures
Hatzlaja SA
Leibnitz No 1 Piso 7; Mexico 5 dif
THAILAND
Bangkok
Thailand Electronics Co Ltd
1006 Dusit Thani Bldg, Rama IV Rd
VENEZUELA
Caracas
Dinarica
Socorra A Plaza Espana, Edificio Mazal, Planta Baja

QUAD SYSTEMS INC
16021 Industrial Dr
Gaithersburg, MD 20760
301-948-4612
Contact: R Cooperman
■ Products & Services
Front-end processors
Line sharing units
Multiplexers, statistical (intelligent)
Packet processors
Minicomputers
Tape drives, magnetic
Remote line printers
Computer/communications interfaces
Data compression devices
Protocol converters
Branch Sales Offices:
CA La Crescenta
Beckrep Inc
5838 Irving Ave
213-957-1111
MA No Easton
Heather Associates
27 Heritage Dr
617-583-7698

QUESTRONICS INC
3565 South West Temple #5
Salt Lake City, UT 84115
801-262-9923
Contact: LeRoy Jacobsen
■ Products & Services
Data content monitors
Protocol analyzers
Response-time monitors
Branch Sales Offices:
CA El Granada
D C M Assoc
Box 1192
415-726-6326
CA Los Angeles
Ezra Mintz Assoc
8929 S Sepulveda Blvd
213-670-5410
CO Littleton
Dapec Inc
5575 Sycamore
303-798-6538
IL Deerfield
J G Janowick Associates
617 Longfellow Dr
312-948-7177
MA Lexington
Electronic Sales & Marketing
4 Angier Rd
617-862-4685
MN Minneapolis
RAE Associates
7317 Cahill Rd
612-835-2100
NJ Cherry Hill
Datronix
20 Brace Rd
609-795-1141

NJ Palisades Park
Data Net, Inc
120 W Palisades Blvd
201-592-6750

OH Toledo
Inter Computer Service
Box 393
419-666-2278

TX Richardson
Mid-Southwest Data Systems
406 Highbrook
214-669-0382

WA Bellevue
D P M Assoc
15935 NE 8th St
747-3309

ONTARIO, CANADA
Scarborough
Associated Test Eqpt
3400 Pharmacy Ave
416-497-2208

QUINT SYSTEMS INC
3693 Commercial Ave
Northbrook, IL 60062
312-498-5060
Contact: R H Kruse
■ Products & Services
Portable data entry terminals
Teleprinters
Teleprinters, impact
Teletypewriters

QUME CORP
2350 Qume Dr
San Jose, CA 95131
408-942-4000
Contact: William E Gott
■ Products & Services
Disk drives, floppy
Data entry terminals
Programmable terminals
Remote line printers

Branch Sales Offices:
CA Santa Clara
QUME Corp
1400 Coleman Av
408-727-6930

CA Torrance
QUME Corp
2501 237 St
213-326-7812

GA Decatur
Qume Corp
4319 Covington Hwy
404-284-8500

IL Palatine
Qume Corp
909 Wilmette Rd
312-991-7250

MA Waltham
Qume Corp
255 Bear Hill Rd
617-890-1890

NJ Upper Saddle River
QUME Corp
23 Industrial Ave
201-327-4244

OH Dayton
Qume Corp
5335 Far Hills Ave
513-439-0469

TX Dallas
Qume Corp
4747 Leston St
214-688-0074

QYTEL
285 Madison Ave
New York, NY 10017
212-684-0146
Contact: Eileen Moody
■ Products & Services
Concentrators
Front-end processors
Line sharing units
Modem sharing units
Multiplexers, time division
Inverse multiplexers
Multiplexers, statistical (intelligent)
Port selectors
Port sharing units
Remote network processors
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Network management centers
Local networks
Local network interfaces
Minicomputers
Add-on main memory
Disks, floppy
Disk packs
Batch terminals
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Automatic calling units
Protocol converters
Ribbons and supplies for terminals and printers
Satellite delay compensation units
Switches, data communications: manual
Data communications consultants
Lease and resale organizations
Used equipment

Branch Sales Offices:
CT New Haven
Qytel
300 Geurgest
203-371-5282

NJ Bogota
Qytel
204 Leonia Ave
201-487-7737

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

RACAL-MILGO
8600 NW 41st St
Miami, FL 33166
305-592-8600
Advertising page 43
Contact: Matthew Kenny
■ Products & Services
Modem sharing units
Multiplexers, statistical (intelligent)
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
MIL 188C adapters
Network management centers
Technical control centers
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Teleprinters, impact
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Data security devices: encoder/decoders
Voice adapters
Data communications consultants
Maintenance organizations
Used equipment

Branch Sales Offices:
CA Sherman Oaks
Racal-Milgo Information Systems
14755 Ventura Blvd
213-995-6167

DC Washington
Racal-Milgo Information Systems
1111 19 St NW
202-296-4940

FL Miami
Racal-Milgo Intercontinental
8600 NW 41 St
305-592-7654

GA Atlanta
Racal-Milgo Information Systems
Airport/285 Office Park Bldg 3
404-763-0304

IL Des Plaines
Racal-Milgo Information Systems
1001 Touhy Ave
312-298-7150

NY New York
Racal-Milgo Information Systems
122 E 42 St
212-687-5040

SC Greenville
Racal-Milgo Information Systems
25 Woods Lake Rd
803-233-1748

BRITISH COLUMBIA, CANADA
Vancouver
Electronetic Systems
1033 Davie St
604-687-5696

ONTARIO, CANADA
Weston
Electronetic Systems
785 Arrow Rd
416-745-2999

ONTARIO, CANADA
Ottawa
Electronetic Systems
34 Bentley Ave
613-226-1232

QUEBEC, CANADA
Montreal
Electronetic Systems
3 Place Villemarie
514-878-1168

RACAL-TELESYSTEMS INC
410 N Michigan Ave
Chicago, IL 60611
312-329-0700
Advertising page 152
Contact: Stuart Weiner
■ Products & Services
Code/protocol conversion programs
Code converters
Computer/communications interfaces
Protocol converters

RACAL-VADIC INC
222 Caspian Dr
Sunnyvale, CA 94086
408-744-0810
Advertising page 63
Contact: Ron Burson
■ Products & Services
Acoustic couplers
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Data access arrangement devices
Branch Sales Offices:

AL Huntsville
Col-Ins-Co Inc
Box 4028
800-327-6600

AK Anchorage
Transalaska Data Systems
200 Center Ct
907-344-1141

AK Juneau
Transalaska Data Sys
114 Glacier Hwy
907-789-4101

AZ Scottsdale
Barnhill Assoc
7319 E Stetson Dr
602-947-7841

CA Anaheim
Moxon Electronics Inc
1970 S Santa Cruz St
800-422-4591

CA San Diego
Moxon Electronics Inc
8388 Vickers St
714-565-1557

CA Santa Clara
Moxon Electronics Inc
2376 Walsh Rd
408-727-6491

CA Lodi
Moxon Electronics
330 S Fairmont
209-334-1961

CO Englewood
Barnhill Assoc
7076 S Alton Way
303-779-3600

CT Wallingford
IMF Sales Assoc
200 Mansion Rd
203-265-0215

FL Orlando
Col-Ins-Co Inc
Box 13189
305-423-7615

FL St Petersburg
Col-Ins-Co Inc
Box 10729
813-823-7082

FL Coral Springs
Col-Ins-Co Inc
Box 8827
800-432-4480

GA Clarkston
Col-Ins-Co Inc
Box 559
800-327-6600

IL Oakbrook Terrace
Racal-Vadic Inc
18 W 100 22 St
312-932-9268

IL Rolling Meadow
SEA Inc
1225 Carnegie St
312-255-4820

IN Carmel
SEA Inc
624 B S Range Line Rd
317-846-2591

KS Olathe
Inland Assoc
15021 W 117th St
913-764-7977

LA Baton Rouge
Col-Ins-Co
11814 Coursey Blvd #437
800-327-6600

LA Baton Rouge
Barnhill Assoc
4440 N Foster
504-924-6826

MD Silver Spring
Terminal Networks
1370 Lamberton Dr
301-649-6000

MD Lanham
Racal-Vadic Inc
4720J Boston Way
301-459-7430

MA Wakefield
IMF Sales Assoc
12 Lakeside Office Pk
617-245-8900

MA Wakefield
Racal-Vadic Inc
12 Lakeside Office Pk
617-245-8790

MI Ann Arbor
ARC Electronics
2500 Packard Ave
313-973-1133

MN Eden Prairie
Scientific Devices
7032 Willow Creek Rd
612-944-3515

MN Brookfield
Sea Inc
675 N Brookfield Rd
414-784-9379

MO St Louis
Inland Assoc Inc
13100 Manchester Rd
314-821-3742

NJ Ridgewood
Instrumentation Sales Co
171 E Ridgewood Av
201-445-5210

NJ Cherry Hill
Megargel Himmelstein
Av of Commerce;2428 Rte 38
609-779-0200

NM Albuquerque
Barnhill Assoc
1410 D Wyoming NE
505-299-7658

NY E Syracuse
Ossman Instruments
6666 Old Collamer Rd
315-437-6666

NY Rochester
Ossman Instruments
130 Allens Creek Rd
716-473-5720

NY Vestal
Ossman Instruments
300 Main St
607-785-9947

NC Winston-Salem
Col-Ins-Co Inc
Box 11607
919-748-0297

NC Raleigh
Col-Ins-Co
1220 G Manassas Ct
800-327-6600

OH Miamisburg
ARC Electronics
228 Byer Rd
513-859-3040

OH Rocky River
ARC Electronics
21360 Center Ridge Rd
216-333-8375

OR Portland
Rush Drake & Assoc
Box 8009
503-224-3145

PA Pittsburgh
Arc Electronics
160 N Craig St
412-681-8609

SC Greenville
Col-Ins-CO Inc
Box 5091 Station B
800-327-6600

TN Nashville
Col-Ins-CO Inc
1804 Linden Ave
800-327-6600

TX Houston
Barnhill Assoc
10606 Hempstead Hwy
713-688-9971

TX Austin
Barnhill Assoc
111 W Anderson Ln
512-451-0217

TX Richardson
Barnhill Assoc
1101 Executive Dr E
214-231-2573

TX Arlington
Racal-Vadic Inc
2115 Arlington Downs Rd
817-277-2246

UT Murray
Barnhill Assoc
5180 S 300 West
801-262-3000

WA Seattle
Rush Drake & Assoc
11524 15 Ave NE
206-364-8830

ONTARIO, CANADA
Rexdale
Canadian GE
396 Attwell Dr
416-675-7500

ENGLAND
Reading
Racal Milgo Ltd

RACON INC
12628 Interurban Ave S
Seattle, WA 98168
206-241-1110
Contact: Dennis Hensley
■ Products & Services
Line drivers
Microwave/laser systems
Modems, limited distance
Modem eliminators

RADIAN CORP-UNITECH PRODUCTS
8501 Mopac Blvd
Austin, TX 78766
512-454-4797
Contact: T N Kaspar
■ Products & Services
Tape punch/reader, paper
Batch terminals
Data entry terminals
Programmable terminals
Emulation packages
Operating systems
Computer/communications interfaces
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
ENGLAND
London
Task Terminals Ltd
117 Cleveland St
01-637-4516

RAMCOM SYSTEMS
4121 Redwood Ave
Los Angeles, CA 90066
213-827-4432
Contact: Ralph C Tisdale
■ Products & Services
Line sharing units
Message switchers
Multiplexers, time division
Port sharing units

RAMTEK CORP
2211 Lawson Ln
Santa Clara, CA 95050
408-988-2211
Contact: Tony Gunkas
■ Products & Services
Acoustic couplers
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
CA Santa Ana
Ramtek Corp
3625 W MacArthur Blvd
714-979-5351
CO Englewood
Ramtek Corp
7300 South Alton Way
303-694-0758
FL Maitland
Ramtek Corp
235 S Maitland Ave
305-645-0780
IL Schaumburg
Ramtek Corp
2050 Algonguin Rd
312-397-2279
MA Burlington
Ramtek Corp
16 New England Executive Park
617-273-4590
NJ E Brunswick
Ramtek Corp
197 Route 18
201-238-2090
NY Fairport
Ramtek Corp
370 Perinton Hills Office Park
716-425-1742
OH Pepper Pike
Ramtek Corp
29425 Chagrin Blvd
216-464-4053
TX Plano
Ramtek Corp
2010 Ave G
214-422-2200
TX Houston
Ramtek Corp
9700 Club Creek Dr
713-774-2233
VA McLean
Ramtek Corp
8260 Greensboro Dr
703-893-2020
WA Tuknka
Ramtek Corp
955 Industry Dr
206-838-5196

If you know the name of the product and want to know who makes it, turn to **Products & Services Directory, page 7.**

RAPICOM INC
7 Kingsbridge Rd
Fairfield, NJ 07006
201-575-6010
Contact: Jack Gannon
■ Products & Services
Facsimile terminals
Branch Sales Offices:
CA Long Beach
Rapicom Inc
400 Oceangate
213-436-3254
CA San Francisco
Rapicom Inc
5 Thomas Mellon Cir
415-468-3460
CA San Diego
Rapicom Inc
3550 Camino Del Rio N
714-563-8391
CO Denver
Rapicom Inc
9745 E Hampden Ave
303-695-1167
CT Darien
Rapicom Inc
745 Post Rd
203-655-3353
DC Washington
Rapicom Inc
1700 N Moore St
703-527-6561
GA Atlanta
Rapicom Inc
35 Executive Park Dr NE
404-634-4292
IL Hillsdale
Rapicom Inc
4415 W Harrison St
312-449-5680
MA Boston
Rapicom Inc
1616 Soldiers Field Rd
617-782-1581
MI Southfield
Rapicom Inc
24800 NW Hwy
313-356-3300
NY New York
Rapicom Inc
1114 Ave of Americas
212-869-1930
OH Shaker Heights
Rapicom Inc
3645 Warrensville Ctr Rd
216-921-6242
OR Portland
Rapicom Inc
6420 SW Macadam Ave
503-245-1459
PA Pittsburgh
Rapicom Inc
601 Grant St
412-281-2208
PA Bala Cynwyd
Rapicom Inc
7 Bala Ave
215-667-2291
TX Houston
Rapicom Inc
7878 Grow Ln
713-462-7553
TX Dallas
Rapicom Inc
6350 LBJ Fwy
214-661-3826
WA Seattle
Rapicom Inc
1200 112th Av NE
206-453-8749
ONTARIO, CANADA
Ottawa
Rapicom Inc
181 Bank St
613-236-7055
GERMANY, WEST
Weisbaden
Kalle-Infotec
Freidrich-Bergius-Str 5
49-6121-22051
JAPAN
Tokyo
Ricoh Co Ltd
1-15-5 Minami-Aoyama
813-479-3111

RAYTHEON DATA SYSTEMS
1415 Boston-Providence Tnpk
Norwood, MA 02062
617-762-6700
Contact: Charles E Donahue
■ Products & Services
Concentrators
Remote network processors
DDP systems
Minicomputers
Programmable terminals
Remote job entry terminals
Terminal controllers
Word processors, communicating
Code/protocol conversion programs
DDP systems software
Word processing packages
Branch Sales Offices:
AZ Phoenix
201 North Central
602-271-0226
CA Irvine
1692 Browning Ave
714-979-5800
CA San Francisco
2540 Mission College Blvd
408-988-8611
CA Sacramento
1540 River Park Dr
916-920-1740
CO Denver
10515 East 40th Ave
303-371-0990
CT Hartford
111 Founders Plaza
203-289-8281
FL Miami
8355 NW 53rd St
305-592-3884
GA Atlanta
1925 Century Blvd
404-321-3065
IL Des Plaines
1111 East Touhy Ave
312-694-4439

KS Overland Park
Corporate Woods Bldg 23
913-642-1771

MA Wellesley
45 Williams St
617-237-4190

MI Detroit
24133 Northeastern Hwy
313-358-3990

MN Minneapolis
3050 Metro Pkwy
612-854-2666

NJ East Orange
60 Evergreen Pl
201-678-4965

NJ Cherry Hill
Route 70-Bldg 2-201 North Central Ave
609-665-8466

NY New York
99 Park Ave
212-661-2790

NY Lake Success
3000 Marcus Ave
212-895-2567

NY Albany
21 Aviation Rd
518-458-9185

NC Greensboro
Koger Executive Ctr
919-294-5811

PA Pittsburgh
200 Fleet St
412-928-5850

TN Memphis
2500 Mount Moriah
901-365-7270

TX Dallas
10300 No Central Expwy
214-361-9756

TX Houston
15835 Park Ten Place-No 100
713-578-9101

VA Arlington
400 Army-Navy Dr
703-979-6100

WA Bellevue
11110 Northeast 8th
206-453-0650

RAYTHEON SERVICE CO
2 Wayside Rd
Burlington, MA 01803
617-272-9300
Contact: George Clark Jr
■ Products & Services
Maintenance organizations
Timesharing/service bureaus

RCA AMERICAN COMMUNICATIONS INC
400 College Rd East
Princeton, NJ 08540
609-734-4000
Contact: Walt Pioli
■ Products & Services
Facsimile-service carriers
Message (including telegraph) carriers
Satellite carriers
Specialized carriers
Branch Sales Offices:

CA San Francisco
RCA Americom
One Market Plaza
415-546-2130

CA Los Angeles
RCA Americom
624 S Grand Ave
213-485-8761

GA Atlanta
RCA Americom
3395 NE Expwy
404-452-0694

IL Chicago
RCA Americom
Two N Riverside
312-648-0600

NY New York
RCA Americom
1133 Ave of Americas
212-248-2631

TX Houston
RCA Americom
2200 N Loop W
713-680-8903

RCA GLOBAL COMMUNICATIONS INC
60 Broad St
New York, NY 10004
212-248-2121
Contact: Frank A Mancuso
■ Products & Services
Facsimile-service carriers
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Line sharing units
Message switchers
Port sharing units
Network management centers
Technical control centers
Teletypewriters
Terminal controllers
Video data terminals (KSR)
Video data terminals (RO)
Computer/communications interfaces
Switches, data communications: automatic
Data communications consultants
Branch Sales Offices:

CA Anaheim
RCA Global Comm Inc
401 W Lincoln
714-991-4710

CA Los Angeles
RCA Global Comm Inc
911 Wilshire Blvd
213-629-3200

CA San Francisco
RCA Global Comm Inc
260 California St
415-546-2050

CO Englewood
RCA Global Comm Inc
5680 S Syracuse Cir
303-770-0327

CT West Hartford
RCA Global Comm Inc
854 Farmington Ave
203-561-0102

CT Stamford
RCA Global Comm Inc
300 Broad St
203-324-1990

DC Washington
RCA Global Comm Inc
2030 M St NW
202-862-8233

FL Miami
RCA Global Comm Inc
1515 NW 167 St
305-625-3644

GA Atlanta
RCA Global Comm Inc
3395 Northeast Exprwy
404-455-3400

HI Honolulu
RCA Global Comm Inc
Box 2295
808-537-2521

IL Arlington Heights
RCA Global Comm Inc
1650 N Arlington Heights Rd
312-394-5240

KS Shawnee Mission
RCA Global Com Inc
8101 West 63rd St
913-262-3281

LA New Orleans
RCA Global Comm Inc
2 Canal St
504-586-0485

MA Woburn
RCA Global Comm Inc
300 Unicorn Park Dr
617-933-9310

MI Oak Park
RCA Global Comm Inc
21700 Greenfield Rd
313-968-2223

MN Minneapolis
RCA Global Comm Inc
10 4th Avenue S
612-854-4021

MO Manchester
RCA Global Comm Inc
13975 Manchester Rd
314-227-0360

NJ Bridgewater
RCA Global Comm Inc
1425 Frontier Rd
201-560-1960

NY Fairport
RCA Global Comm Inc
145 Perinton Hills Office Pk
716-223-8925

NY Melville
RCA Global Comm Inc
555 Broad Hollow Rd
516-249-3832

OH Cincinnati
RCA Global Comm Inc
405 Executive Park Dr
513-769-5110

OH Cleveland
RCA Global Comm Inc
1127 Euclid Ave
216-566-8137

PA Morrisville
RCA Global Comm Inc
364 W Trenton Ave
215-547-0700

PA Pittsburgh
RCA Global Comm Inc
535 Smithfield St
412-391-3426

TX Dallas
RCA Global Comm Inc
4825 LBJ Frwy
214-387-4470

TX Houston
RCA Global Comm Inc
4615 Southwest Frwy
713-965-0800

WA Bellevue
RCA Global Comm Inc
520 112th Ave NE
206-455-1243

WI Milwaukee
RCA Global Com Inc
312 Wisconsin Ave
414-272-0491

PUERTO RICO
Old San Juan
RCA Global Comm Inc
Box 3388
809-723-4800

ARGENTINA
Buenos Aires
RCA Global Comm Inc
Tucuman 425-2 C
31-5558

AUSTRALIA
Sydney
RCA Global Comm Inc
175 Pitt St
232-6350

BELGIUM
Brussels
RCA Global Comm Inc
4 Rue Gaucheret
218.41.21

BRAZIL
Rio de Janeiro
RCA Global Comm Inc
Avenida Presidente Vargas 962
S/807
263-39-89

CHILE
Santiago
RCA Global Comm Inc
Moneda 920
72 42 07

COLOMBIA
Bogota
RCA Global Comm Inc
Carrera 10 #22-65
282.74.48

DOMINICAN REPUBLIC
Santo Domingo
RCA Global Comm Inc
Calle El Conde 35
682-2887

EGYPT (UAR)
Dokki
Fiani & Partners
1 El Sad El Ai St
805358

EL SALVADOR
San Salvador
RCA Global Comm Inc
Condominio Plaza Suiza
245327

ENGLAND
London
RCA Global Comm Inc
50 Curzon St
01-499-4100

FRANCE
Paris
RCA Global Comm Inc
5 Rue Drouot
824-6363

GERMANY, WEST
Frankfurt
RCA Global Comm Inc
45 Mittelweg
611-591445

GREECE
Athens
RCA Global Comm Inc
Panepistimiou 59
32 44 244

GUAM
Agana
RCA Global Comm Inc
ADA Plaza Center;Box EH
472-3272

GUATEMALA
Guatemala City
RCA Global Comm Inc
6-A Ave;11-43 Zona 1
24.7109

HAITI
Port-au-Prince
RCA Global Comm Inc
92 Place Geffrard Etage Galerie
Nader
2-4200

INDIA
Bombay
International Representative-K
Balchandani
120 Wode House Rd
212484

INDONESIA
Jakarta-Barat
NVPD Soedarpo Corp
Jl Letjen;S Parman Kav
591594

IRAN
Tehran
RCA Globcom Systems Inc
Abbas Abbad Ave
851776

ITALY
Rome
RCA Global Comm Inc
Via Ostiense 81/A
57 42 147

JAPAN
Tokyo
RCA Global Comm Inc
Nishi-Shinjuku 2-chome
347-7843

JORDAN
Amman
International Representative-M
Farr
Box 3402
42462

KOREA REP (REP)
Seoul
RCA Global Comm Inc
60 1-GA Myung-Dong
776-2868

LEBANON
Beirut
International Representative-G
Khoury
JF Kennedy St-Flat 1
366-483

MOROCCO
Casablanca
International Representative-A
Masbah
143 Blvd Zeraoui
261082

NETHERLANDS ANTILLES
Curacao
RCA Global Comm Inc
Villa Park-R001 Catootje
70139

PAKISTAN
Karachi
RCA Global Comm Inc
Box 2130
612419

PANAMA
Panama City
RCA Global Comm Inc
Avenida Balbuay Fcu Boyd
64-7574

PERU
Lima
RCA Global Comm Inc
Av Corpac 290 Of 52
41.21.85

SINGAPORE
Singapore
RCA Global Comm Inc
Unit 2315 23rd Floor
222 7025

SPAIN
Madrid
RCA Global Comm Inc
C/Avda Del Brasil 17
455-2249

SWITZERLAND
Lausanne
RCA Global Comm Inc
Rue Charles Monnard 1
22-71-54

TAIWAN
Taipei
RCA Global Comm Inc
522 Tunhwa
7080421

TURKEY
Istanbul
Istiklal Caddesi
Sinem Sary #108
442672

VENEZUELA
Caracas
RCA Global Comm Inc
Avenida Libertador Con Venezuela
339839

RCA SERVICE CO
DATA SERVICES
Rt 38, Bldg 204-2
Cherry Hill, NJ 08358
609-338-4120
Contact: D M Rudnick
■ Products & Services
Programmable terminals
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Data access arrangement devices
Paper for terminals
Ribbons and supplies for terminals and
printers
Lease and resale organizations
Maintenance organizations
Used equipment

Branch Sales Offices:

CA Montebello
1501 Beach St
213-728-7473

GA Tucker
4508 Bibb Blvd
404-934-9333

IL Bensenville
224 James St
312-595-4910

NJ Jersey City
43 Edward J Hart Rd
201-451-2222

NJ Mt Laurel
102 Gaither Dr
609-234-8900

OH Strongsville
20338 Progress Dr
216-238-9555

TX Arlington
1300 Corporate Dr E
817-640-0900

RCA SOLID STATE
MICROCOMPUTER PRODUCTS DIV
New Holland Ave
Lancaster, PA 17604
717-397-7661
Contact: Scott M Kennedy
■ Products & Services
Minicomputers
Data entry terminals
Interactive terminals
Video data terminals (RO)

REMARK INTERNATIONAL
4 Sycamore Dr
Woodbury, NY 11797
516-367-3806
Contact: Blossom Kramer
■ Products & Services
Modem sharing units
Port selectors
Line drivers
Modems, limited distance
Data content monitors
EIA cable testers
Error rate detectors
Local network interfaces
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: manual
Educational services
Branch Sales Offices:
CA San Jose
Datarep Inc
97 Boston Ave
408-279-1212

RENTAL ELECTRONICS INC
2445 Faber Pl
Palo Alto, CA 94303
415-856-7600
Contact: Sandra R Gilmore
■ Products & Services
Acoustic couplers
Modems, limited distance
Modems, multipoint
Modems, multiport
Data content monitors
Protocol analyzers
Response-time monitors
Disk drives, floppy
Tape punch/reader, paper
Digital plotters
Graphic display terminals
Programmable terminals
Portable data entry terminals
Remote line printers
Video data terminals (KSR)
Video data terminals (RO)
Power supplies
Lease and resale organizations
Branch Sales Offices:
CA Fullerton
Rental Electronics Inc
597 S State College Blvd
714-879-0561
CA Mountain View
Rental Electronics Inc
2440 Charleston Rd
415-968-8845
CA Northridge
Rental Electronics Inc
19527 Business Centre Dr
213-993-7368
IL Des Plaines
Rental Electronics Inc
1267 N Rand Rd
312-827-6670
KY Woburn
Rental Electronics Inc
17 Wheeling Ave
617-938-0900
MD Gaithersburg
Rental Electronics Inc
16600 Oakmont Ave
301-948-0620
MA Burlington
Rental Electronics Inc
One North Ave
617-273-2770
NJ Wyckoff
Rental Electronics Inc
681C Lawlins Rd
201-891-8500
TX Dallas
Rental Electronics Inc
4402 Sunbelt Dr
214-661-8082
BRITISH COLUMBIA, CANADA
Vancouver
Genstar Rental Electronics Inc
1130 West Pender St
604-687-3661
ONTARIO, CANADA
Rexdale
Rental Electronics Inc
50 Galaxy Blvd
416-675-7513
QUEBEC, CANADA
Villa St Laurent
Rental Electronics Inc
5855 Bissette
514-337-5575

RESOURCE SOFTWARE INT INC
140 Sylvan Ave
Englewood Cliffs, NJ 07632
201-947-6104
Contact: John F Jenkins
■ Products & Services
Applications packages
Word processing packages
Educational services

RFL INDUSTRIES INC
Powerville Rd
Boonton, NJ 07005
201-334-3100
Contact: Al Jordon
■ Products & Services
Multiplexers, frequency division
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Branch Sales Offices:
AZ Sun City
Luscombe Engineering
13640 Kaana Palo Point
602-979-8944
CA Pasadena
Luscombe Engineering Co
99 S Chester Av
213-684-2000
CA Novato
Tarbell Assoc
Box 1595
415-897-7544
CA San Diego
Luscombe Engineering
2609 Adams Ave
714-295-4300
CO Arvada
Claredon Co
8141 W I-70 Frontage Rd N
303-424-2010
DC Washington
Instrucom Inc
1629 K St NW/Ste 500
202-223-1759
FL St Petersburg
Commark Corp
Box 20023
813-577-0400
HI Honolulu
Clemco Pacific
2929 Ualena St
808-836-2211
IL Roselle
Ray Rosenkoetter Assoc
Box 312
312-529-3300
MN Minneapolis
Robert W Marshall Co Inc
6106 Excelsior Blvd
612-929-0457
MO Cameron
Comm Systems Assoc
520 W 5th St
816-632-7616
NH Keene
RFL Industries Inc
44 Dickinson Rd
603-352-6710
NY Lynbrook
Puleo Electronics Inc
39 Hutcheson Pl
516-599-4875
OH Cleveland
Lax Associates Inc
18615 Detroit Ave
216-226-8815
OH Oxford
Lax Associates Inc
5415 Wallace Rd
513-523-5424
OR Tigard
Instrumentation/Control Systems Inc
14260 SW High Tor
503-639-0334
PA Pittsburg
Lax Associates Inc
Box 12613
412-833-5477
TX Houston
RFL Industries Inc
12315 Woodthorpe
713-464-1178
PUERTO RICO
Rio Piedras
Williams Technical
215 Duran Bldg
809-765-5380

RIANDA ELECTRONICS LTD
2535 Via Palma
Anaheim, CA 92801
714-995-6552
Contact: Linda Carter
■ Products & Services
Add-on main memory
Cartridge drives
Disk drives, large
Tape drives, magnetic
Branch Sales Offices:
CA Anaheim
Moxon Electronics
1970 S Santa Cruz St
714-635-7600
FL Orlando
FM Assoc
5018 Mortier Ave
305-851-5716
MD Kensington
TE Corp
3702 Perry Ave
301-946-8300
NM Albuquerque
PAR Assoc South
2403 San Mateo NE
505-881-5000
PA King of Prussia
Rivco-January
649 S Henderson Rd
215-265-5211

RIXON INC
2120 Ind Parkway
Silver Spring, MD 20904
301-622-2121
Contact: Bob Arnold

■ Products & Services
Line sharing units
Modem sharing units
Multiplexers, time division
Multiplexers, statistical (intelligent)
Channel service units
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Technical control centers
Automatic calling units
Furniture, cabinets, terminal enclosures
Switches, data communications: manual
Voice adapters

Branch Sales Offices:
CA Garden Grove
Rixon Inc
7271 Garden Grove Blvd
714-898-7737

CA Burlingame
Rixon Inc
1499 Bayshore Hwy
415-692-7997

CA Cary
Rixon Inc
901 Kildaire Farm Rd, Bldg D
919-467-0074

CO Denver
Rixon Inc
1582 S Parker Rd
303-750-3682

CT Bridgeport
Rixon Inc
2266 E Main St
203-334-3414

FL Tampa
Rixon Inc
9225 Bay Plaza Blvd
813-626-1235

IL Downers Grove
Rixon Inc
1501 Ogden Av
312-852-3226

MI Ann Arbor
Rixon Inc
3918 Trade Center Dr
313-973-6911

MO Kansas City
Rixon Inc
4420 Madison Av
816-531-4411

OH Dayton
Rixon Inc
5757 Far Hills Av
513-435-1948

PA Bryn Mawr
Rixon Inc
1049 Lancaster Ave
215-525-2663

TX Houston
Rixon Inc
6001 Gulf Frwy
713-923-5529

ALBERTA, CANADA
Edmonton
Rixon/Schlumberger
10049 81 Ave
403-433-1351

ONTARIO, CANADA
Ottawa
Rixon/Schlumberger
Unit 113, 2710 Lancaster Rd
613-526-1260

ROBINS INDUSTRIES CORP
75 Austin Blvd
Commack, NY 11725
516-543-5200
Contact: Stuart Caine
■ Products & Services
Tape, paper
Error controllers

To find out who makes a certain product, turn to **Products & Services Directory, page 7.**

ROCKWELL INTERNATIONAL ELECTRONIC DEVICES DIVISION
Box 3669;Miraloma Ave
Anaheim, CA 92806
714-632-3729
Contact: F DeNardo
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)

Branch Sales Offices:
CA Irvine
Rockwell Int'l
1842 Reynolds
714-632-3710

IL Des Plaines
Rockwell Int'l
1011 E Touhy
312-297-8862

NJ N Brunswick
Rockwell Int'l
850-870 US Rt 1
201-246-3630

GERMANY, WEST
Munchen-Martinsried
Rockwell Int'l GmbH
Fraunhoferstrasse 11
089-859-9575

JAPAN
Chiyoda-Ku
Rockwell Int'l Overseas
Itohpia Hirakawa Bldg
03-265-8806

ROLM CORP
4900 Old Ironsides Dr
Santa Clara, CA 95050
408-988-2900
Contact: R Nugent
■ Products & Services
Branch exchanges—computerized (CBX)
Disk drives, floppy
Electronic mailboxes
Applications packages

ROYTYPE
1031 New Britain Ave
West Hartford, CT 06110
203-523-4881
Contact: Frank Schooley
■ Products & Services
Disks, floppy
Disk packs
Tape, magnetic
Ribbons and supplies for terminals and printers

Branch Sales Offices:
CA San Diego
Royal Business Machines Inc
2817 Wilkerson Ct
714-268-0441

CA Los Angeles
Royal Business Machines Inc
2828 Beverly Blvd
213-385-0571

CA Oakland
Royal Business Machines Inc
8390 Capwell Dr
415-562-8120

CA San Jose
Royal Business Machines Inc
92 Bonaventura Dr
408-263-8210

CA Burbank
Royal Business Machines Inc
4219 W Burbank Blvd
213-842-4874

CA San Francisco
Royal Business Machines Inc
54 Tenth St
415-431-4338

CA Garden Grove
Royal Business Machines Inc
11330 Markon St
213-594-6914

CT Hartford
Royal Business Machines Inc
621 Framington Ave
203-236-2354

DC Washington
Royal Business Machines Inc
1700 Wisconsin Ave NW
202-337-8900

FL Opa Locka
Royal Business Machines Inc
1825 NW 167th St
305-621-0777

FL Akron
Royal Business Machines Inc
112 W Wilbeth Rd
216-724-5506

GA Atlanta
Royal Business Machines Inc
2675 Johnson Rd NE
404-320-6422

HI Honolulu
Royal Business Machines Inc
1200 North Nimitz Hwy
808-536-3648

IL Chicago
Royal Business Machines Inc
100 W Erie St
312-266-5860

IN Indianapolis
Royal Business Machines Inc
2445 E 54th St
317-253-1625

IA Des Moines
Royal Business Machines Inc
1055 Sixth Ave
515-282-6591

IA New Cumberland
Royal Business Machines Inc
Box 699 RD 1
717-774-3222

KY Louisville
Royal Business Machines Inc
1517 Bardstown Rd
502-451-3211

LA Metairie
Royal Business Machines Inc
2328 N Arnoult
504-837-0040

MD Baltimore
Royal Business Machines Inc
15 Governors Court;Rutherford Business Center
301-298-1600

MD Albany
Royal Business Machines Inc
262 Delaware Ave
518-439-4966

MA Boston
Royal Business Machines Inc
928 Commonwealth Ave
617-566-3300

MI Madison Heights
Royal Business Machines Inc
555 E Mandoline
313-589-1120

MI Birmingham
Royal Business Machines Inc
25 West Oxmoor Rd;Hager Bldg
205-945-0722

MI Aurora
Royal Business Machines Inc
3538 Peoria St
303-340-2130

MN Minneapolis
Royal Business Machines Inc
6415 Wayzata Blvd
612-544-1541

MO St Louis
Royal Business Machines Inc
1441 Hampton Ave
314-647-8500

MO Kansas City
Royal Business Machines Inc
6459 N Universal Ave
816-241-1822

NE Omaha
Royal Business Machines Inc
3035 S 72nd St
402-397-5220

NJ Somerset
Royal Business Machines Inc
14C Worlds Fair Dr
201-560-1900

NY Syosset
Royal Business Machines Inc
6800 Jericho Tnpke
516-364-8800

NY New York
Royal Business Machines Inc
655 Third Ave
212-599-6700

NY Buffalo
Royal Business Machines Inc
842 Kenmore Ave
716-876-7200

NY Rochester
Royal Business Machines Inc
624 Campbell St
716-325-7620

NY Pine Brook
Royal Business Machines Inc
60 Chapin Rd
201-575-6125

NY Elmsford
Royal Business Machines Inc
175 Clearbrook Rd
914-592-5860

NC Charlotte
Royal Business Machines Inc
4957 Albermarle Rd
704-536-9883

NC Chelmsford
Royal Business Machines Inc
13 Action Rd
617-256-6501

OH Cincinnati
Royal Business Machines Inc
4740 H Dues Dr
513-874-3430

OH Independence
Royal Business Machines Inc
5605 Valley Belt Rd
216-398-9100

OH Columbus
Royal Business Machines Inc
1185 E Broad St
614-253-8603

OR Lake Oswego
Royal Business Machines Inc
15171 SW Bangy Rd
503-620-7090

PA Philadelphia
Royal Business Machines Inc
3913 Chestnut St
215-382-7900

PA Pittsburgh
Royal Business Machines Inc
2180 Noblestown Rd
412-922-3800

RI Cranston
Royal Business Machines Inc
22 Rolfe St
401-738-9494

SC Columbia
Royal Business Machines Inc
240 Gracern Rd
803-798-8081

TN Memphis
Royal Business Machines Inc
2966 Vantage Dr
901-345-3363

TN Nashville
Royal Business Machines Inc
1004 Old Tree Ct
615-254-5917

TX Dallas
Royal Business Machines Inc
200-B Frito Lay Tower
214-358-2501

TX Houston
Royal Business Machines Inc
9433 Harwin Dr
713-780-3100

TX Austin
Royal Business Machines Inc
314 Highland Mall Blvd
512-656-9494

TX San Antonio
Royal Business Machines Inc
2800NE Loop 410
512-656-9494

VA Norfolk
Royal Business Machines Inc
7466 Tidewater Dr
804-587-8755

WA Milford
Royal Business Machines Inc
50 Commerce Park Rd
203-878-2431

WA Seattle
Royal Business Machines Inc
2313 Third Ave
206-624-4321

WI Milwaukee
Royal Business Machines Inc
8229 W Capitol Dr
414-464-4800

RUSCO ELECTRONIC SYSTEMS
1840 Victory Blvd
Glendale, CA 91201
213-240-2540
Contact: Stuart Katcher
■ Products & Services
Badge readers
Data entry terminals
Data security devices: personal identification systems

Branch Sales Offices:

CA Palo Alto
Rusco Electronic Systems
1804 Embarcadero Rd
415-858-1000

CA Los Angeles
Rusco Electronic Systems
2266 Davie Ave
213-725-1411

CA San Diego
Rusco Electronic Systems
5333 Mission Cntr Rd
714-297-5173

CA Tustin
Rusco Electronic Systems
17411 Irvine Blvd
714-832-1416

CO Aurora
Rusco Electronic Systems
10700 E Bethany Dr
303-696-9380

CT Glastonbury
Rusco Electronic Systems
39 New London Tpk
203-633-8379

FL Tampa
Rusco Electronic Systems
2625 E 4 Ave
813-248-4955

GA Atlanta
Rusco Electronic Systems
1950 Century Blvd
404-325-1025

IL Elmhurst
Rusco Electronic Systems
188 Industrial Dr
312-833-0720

IN Indianapolis
Rusco Electronic Systems
2346 S Lynhurst Dr
317-247-0877

LA Metairie
Rusco Electronic Systems
3108 Cleary Ave
504-456-1366

MA Foxboro
Rusco Electronic Systems
38 Mechanic St
617-543-4891

MI Farmington Hills
Rusco Electronic Systems
32985 Hamilton Ct
313-553-9320

MN Burnsville
Rusco Electronic Systems
201 W Burnsville Crosstown
612-894-8040

MO St Louis
Rusco Electronic Systems
2031 Olive St
314-231-8622

NJ Hackensack
Rusco Electronic Systems
401 Hackensack Ave
201-343-7100

NY New York City
Rusco Electronic Systems
60 E 42nd St
212-883-1155

NY Albany
Rusco Electronic Systems
125 Wolf Rd
518-459-6593

NC Charlotte
Rusco Electronic Systems
4801 E Independence
704-535-4120

OH Cincinnati
Rusco Electronic Systems
230 Northland Blvd
513-771-6297

OH Independence
Rusco Electronic Systems
6553 Brecksville Rd
216-447-8470

PA Philadelphia
Rusco Electronic Systems
8040 Roosevelt Blvd
215-331-5313

PA Pittsburgh
Rusco Electronic Systems
2945 Banksville Rd
412-561-8243

TN Nashville
Rusco Electronic Systems
417 Welshwood Dr
615-832-7666

TX Richardson
Rusco Electronic Systems
324 N Central Expwy
214-690-3640

TX Houston
Rusco Electronic Systems
6330 Gulfton St
713-777-5254

VA Arlington
Rusco Electronic Systems
1745 Jefferson Davis Hwy
703-892-1400

WI New Berlin
Rusco Electronic Systems
2345 S 170th St
414-784-6850

SABER LABORATORIES INC
577 Tenth St
San Francisco, CA 94111
415-431-4707
Contact: Leo Jones
■ Products & Services
Data security devices: encoder/decoders

SAI TECHNOLOGY CO
4060 Sorrento Valley Blvd
San Diego, CA 92121
714-452-9150
Contact: William Archuleta
■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Branch Sales Offices:
FL Orlando
Eltruex Assoc
4864 S Orange Av
305-859-2160

MN Wayzata
Dorwart Peripherals
250 N Central
612-473-9242

NY Northport
Data Logic Sales Inc
16 Juliet La
516-757-3330

SAMSONITE CONTRACT FURNITURE
11200 E 45th Ave
Denver, CO 80239
303-344-6188
Contact: Mike Wissman
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
IN Greenwood
Mike Coleman
384 Pleasant View Blvd
317-888-3063

TN Murfreesboro
Werner Forsberg
2125 Tomahawk Trace
615-890-7045

TX Ft Worth
Don Crump
Box 16383
817-923-2809

SANDERS ASSOCIATES INC
Daniel Webster Highway S
Nashua, NH 03061
603-885-5280
Contact: Arne Schumacher
■ Products & Services
Graphic display terminals
Programmable terminals
Interactive terminals
Terminal controllers
Branch Sales Offices:
MN St Paul
DeBeck Associates Inc
2119 Grand Ave
612-690-1557

TX Dallas
Sanders Associates Inc
7540 LBJ Fwy
214-385-1665

VA Arlington
Sanders Associates Inc
1755 S Jefferson Davis Hwy
703-920-5204

Want even more information on products?
Turn to **UpDate Service Card, page 201.**

SANGAMO WESTON, INC, DATA SYSTEMS DIVISION
Box 3041
Sarasota, FL 33578
813-0811
Contact: Barry L Barton
■ Products & Services
Error rate detectors
Data security devices: encoder/decoders
Branch Sales Offices:
CA Irvine
Fairchild Weston Systems Inc
2021 Business Center Dr
714-851-9401

FL Sarastoa
Fairchild Weston Systems Inc
Box 10249
813-371-0811

MD Silver Springs
Fairchild Weston Systems Inc
1320 Fenwick Ln
301-588-8200

SATELLITE BUSINESS SYSTEMS
8283 Greensboro Dr
McLean, VA 22102
703-442-5577
Contact: Fred N King
■ Products & Services
Satellite carriers
Branch Sales Offices:
CT Stamford
Satellite Business Systems
2777 Summer St
203-348-3300

SCHLAGE ELECTRONICS
3260 Scott Blvd
Santa Clara, CA 95051
408-727-5170
Contact: Bill Miller
■ Products & Services
Badge readers
Data security devices: personal identification systems
Branch Sales Offices:
CA Sunnyvale
Dave Gibbs & Assoc
848A Stewart Dr
408-245-6692

GA Atlanta
McCoy Services
3133 Oakcliff Industrial St
404-455-1990

IL Palos Park
Security Lines
12620 South 90th Ave
312-448-3373

NH Londonderry
Associated Systems
Box 333
603-434-0731

NJ Pitman
Cogan Sales, Inc
133 Magnolia Ave
609-589-7455

NJ Westfield
Electro-Marketing
10 Cornwall Dr
201-232-7531

TX Dallas
Techno Assoc
2430 Shorecrest
214-357-9212

VA Annandale
Whittaker
4901 Chanticleer Ave
703-978-7558

WA Seattle
Mar Corp
954 Industry Dr
206-575-1798

SCIENCE ACCESSORIES CORP
970 Kings Highway W
Southport, CT 06490
203-255-1526
Contact: H A Cleveland
■ Products & Services
Digital plotters
Graphic display terminals
Branch Sales Offices:
CA Tustin
Electronic Marketing Specialists
2600 Walnut Ave
714-832-9920

CO Golden
J F Hurlbut Assoc
622 Gardenia Ct
303-279-7796

IL Northbrook
Resource Data Systems
801 Skokie Blvd
312-564-5440

MA Needham
J J Wild Inc
163 Reservoir St
617-444-2366

MI Milford
Milford Scientific Inc
Box 400
313-564-5440

MN St Paul
Dytec/North
1821 University Ave
612-645-5816

MO St Louis
Boyce Scientific
435 Oakwood Ave
314-961-8235

NY Binghamton
TAE Rep Inc
209 Court St
607-772-6952

NC Charlotte
James L Highsmith & Co
1411 Hawthorne Ln
704-333-7743

PA Dayton
Boco Inc
1329 Stanley Ave
513-224-0220

VA Fairfax
Sci-Rep
9512A Lee Hwy
703-385-0600

WA Bellevue
Showalter Instruments
1521 130th NE
206-455-4922

SCIENTIFIC-ATLANTA INC
SATCOM DIVISION
3845 Pleasantdale Rd
Atlanta, GA 30340
404-441-4000
Contact: Danny Cornett
■ Products & Services
Earth stations
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Selection & transfer equipment: monitor & test switching equipment
Branch Sales Offices:
CA Santa Clara
Scientific-Atlanta
3375 Scott Blvd
408-496-1040
MD Crofton
Scientific-Atlanta
2121 Baldwin Av
301-261-3233
ENGLAND
Horton Slough
Scientific-Atlanta Europe
Horton Manor, Stanwell Rd
44-2812-3211

SCOPE ELECTRONICS INC
1860 Michael Faraday
Reston, VA 22090
703-471-5600
Contact: Richard S Nickell
■ Products & Services
Front-end processors
Acoustic couplers
Automatic answering units
Automatic calling units

SELANAR CORP
2403 De LaCruz Blvd
Santa Clara, CA 95050
408-727-2811
Contact: Lee Ambrosini
■ Products & Services
Digital plotters
Graphic display terminals
Interactive terminals
Remote line printers
Terminal controllers
Branch Sales Offices:
ONTARIO, CANADA
Markham
CES Ltd
528 Hood Rd
416-495-5555
AUSTRALIA
Pymble NSW
Digital Electronics Pty Ltd
31 Bridge St
02-449-4400
GERMANY, WEST
Ottobrunn
ISI Computer GmbH
Alte Landstrasse 5
089-6060 71/72

SELECTERM INC
Two Audubon Rd
Wakefield, MA 01880
617-246-1300
Contact: George Troy
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
EIA cable testers
Cassettes
Cassette drives
Data entry terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Video data terminals (KSR)
Word processors, communicating
Cables, electrical prefabricated extending
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Larkspur
Selecterm
1100 Larkspur Landing Cir
415-461-5730
MA Wakefield
Selecterm
2 Audubon Rd
617-246-1300
NY New York
Selecterm
2 Penn Plaza
212-868-1300
VA Arlington
Selecterm
1555 Wilson Blvd
703-522-2520

SENTINEL COMPUTER CORP
9902 Carver Rd
Cincinnati, OH 45242
513-984-6622
Contact: Jack W Peters
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Database processors
Applications packages
Branch Sales Offices:
ENGLAND
London
Sentinel Computers Europe Ltd
12/13 Henrietta St
01-240-1056

SESA—HONEYWELL COMMUNICATIONS, INC
487 Carlisle Dr
Herndor, VA 22070
703-471-5493
Contact: Don Wehe
■ Products & Services
Concentrators
Packet processors
Network management centers
Code/protocol conversion programs
Branch Sales Offices:
NJ Jersey City
Sesa
One Exchange Pl
201-332-3799

SHAPE MAGNETRONICS INC
901 DuPage Ave
Lombard, IL 60148
312-620-8394
Contact: Joyce Gerrish
■ Products & Services
Power Distribution-Regulation
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AL Huntsville
L & D Inc
4306-D Governor's Dr
205-837-1469
CA Santa Clara
Thomas Assoc
460 Aldo Ave
408-988-4484
CA Cerritos
Jim Blesso Associates Inc
13910 Struikman Rd
213-926-9561
CO Denver
Lindberg Co
6140 E Evans Ave
303-758-9033
CT Bloomfield
Wood Sales Corp
160 Cottage Grove Rd
203-243-0457
FL Clearwater
Brennan Assoc
211 S Ewing
813-446-5006
GA Atlanta
L & D Inc
4675 N Shallowford Rd
404-455-3483
IL Highland Park
Bransky Sales
1726 First St
312-433-2375
IN Indianapolis
Engineering Products Inc
2618 East 45th St
317-545-5208
IN Indianapolis
Green-Wissler Sales Co Inc
6214 Morenci Trail
617-291-2232
KS Leawood
R L Graham Assoc
9201 W 92nd St
913-383-3475
LA Covington
Mid-South Sales Assoc
143 Tefuntche Dr
MA Needham Hts
Wood Sales Corp
687 Highland Ave
617-444-1601
MI Oak Park
The Willard Spenser Co
21500 Greenfield Rd
313-967-0808
MN Minneapolis
A J Warner Co
4927 34th Ave
612-729-7371
NJ Boonton
TMA
30 Lake Dr
201-263-2946
NM Alburquerque
Lindberg Co
4163 Montgomery NE
505-881-1006
NY Port Washington
TMA
8 Second Ave
516-883-2432

NY Huntington
TMA
6 Greenhill Ln
516-368-3427

NC Raleigh
L & D Inc
Merton Dr
919-876-8050

NC Greensboro
L & D Inc
5510 W Friendly
919-292-3201

OH Columbus
Marlow Associates Inc
4842 Jennie Wren Ct N
614-885-7643

OH Dayton
Marlow Associates Inc
1225 F Lyons Rd
513-435-5673

OH Cleveland
Marlow Associates Inc
3645 Warrensville Ctr Rd
216-991-6500

PA Rydal
Espy Sales Co
108 Rydal West
215-576-0780

PA Pittsburgh
Marlow Associates Inc
37 McMurray Bldg 1
412-831-6113

TN Memphis
Mid-South Sales Assoc
560-B South Cooper
901-272-1209

TX Dallas
Bonser/Philhower Sales
13777 N Central Exwy
214-234-8438

TX Austin
Bonser/Philhower Sales
8330 Burnet
512-458-3569

TX Houston
Bonser/Philhower Sales
11700 Southwest Frwy
713-495-3115

UT Salt Lake City
Lindberg Co
431 S Third E
801-534-1500

VA Midlothian
L & D Inc
12008 Deerhurst
804-359-0125

WA Seattle
H M Denny Company
3410 16th Ave
206-282-7200

WI Cedarburg
Bransky Sales
10780 Crestview Dr
414-377-6837

SHERWOOD DIGITAL ELECTRONICS CORP
449 E 2100 S
Salt Lake City, UT 84115
801-486-4817
Contact: Darryl Hazelgren
■ Products & Services
Terminal interfaces
Code converters
Computer/communications interfaces
Protocol converters
Branch Sales Offices:
MN Minneapolis
Communications Interfaces Inc
Box 2320;Loop Station
507-663-0087

PA Pittsburgh
Expandor Inc
400 Sainte Claire Plz
412-746-2910

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

SHUGART ASSOC
475 Oakmead Pkwy
Sunnyvale, CA 94086
408-733-0100
Contact: George Sollman
■ Products & Services
Disk drives, floppy
Disk drives, large
Branch Sales Offices:
CA Milpitas
Shugart Assoc
758 Sycamore Dr
408-263-2600

CA Costa Mesa
Shugart Assoc
1503 S Coast Dr
714-979-1935

GA Atlanta
Shugart Assoc
41 Perimeter Pl
404-955-8968

MA Framingham
Shugart Assoc
1661 Worcester Rd
617-879-1700

MN Minneapolis
Shugart Assoc
7271 Commerce Circle W
612-574-9750

NJ Mt Freedom
Shugart Assoc
One West Hanover Ave 107
201-895-4150

TX Richardson
Shugart Assoc
1215 Executive Dr East
214-234-3568

ONTARIO, CANADA
Markham
Shugart Assoc
87 Telson Rd
416-495-2655

FRANCE
Rungis Cedex
Shugart Assoc
2 Rue Nicolas Ledoux
1-686.00.85

GERMANY, WEST
8031 Puchheim-Bahnhof
Shugart Assoc
Benzstrasse 28
089-80-60-55

SIDEREAL CORP
9600 SW Barnes Rd
Portland, OR 97225
503-297-5531
Contact: J Miller
■ Products & Services
Programmable terminals
Interactive terminals
Video data terminals (KSR)
Word processors, communicating
Branch Sales Offices:
CA San Jose
Sidereal Corp
4010 Moorpark Ave
408-246-2626

CA Los Angeles
Sidereal Corp
9841 Airport Blvd
213-516-6370

CO Denver
Computer Equipment Marketing Inc
9175 E Kenyon Ave
303-773-6974

GA Atlanta
Sidereal Corp
1925 Century Blvd
404-320-1000

IL Des Plaines
Sidereal Corp
1011 Touhy Ave
312-824-3112

MA Waltham
Sidereal Corp
400-2 Totten Pond Rd
617-890-1235

NY New York
Sidereal Corp
630 Fifth Ave
212-246-9640

OH Canton
Sidereal Corp
4450 Belden Village Ave NW
216-492-7851

TX Dallas
Sidereal Corp
5501 LBJ Frwy
214-239-0032

TX Houston
Sidereal Corp
1213 West Loop N
713-682-3323

VA Annandale
Government Sales Inc
4407 Carrico Dr
703-354-4050

WA Bellevue
Computer Equipment Inc
415 Bellevue Way NE
206-747-6500

SIECOR OPTICAL CABLE
Box 610
Hickory, NC 28603
704-322-3740
Contact: John L Ellis
■ Products & Services
Cables, lightwave (optical fiber)

SIEMENS CORP
186 Wood Av S
Iselin, NJ 08830
201-494-1000
Contact: P Bartuska
■ Products & Services
Disks, floppy
Tape, paper
Tape punch/reader, paper
Facsimile terminals
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Data security devices: encoder/decoders
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:
CA Anaheim
Siemens
240 E Palais Rd
714-991-1982

CA Burlingame
Siemens
860 Hinckley Rd
415-697-6851

CA Torrance
Siemens
3535 Fashion Way
213-370-3611

CT Meriden
Siemens
1A Prestige Dr
203-235-7971

GA Atlanta
Siemens
3404 Oakcliff Rd, Bay C
404-451-8151

IL Rosemont
Siemens
5310 N Siemens Ct
312-671-2810

MD Wheaton
Siemens
11141 Georgia Ave
301-933-6560

MA Needham Hts
Siemens
30 Wexford St
617-449-3450

NJ Cherry Hill
Siemens
2 Pin Oak Dr
609-424-9210

NY New York
Siemens
767 Fifth Av Gen Motors Bldg
212-832-6601

NC Greensboro
Siemens
2303 W Meadowview Rd
919-852-4611

TX Memphis
Siemens
3050 Directors Row
901-345-6622

SIGNETICS CORPORATION
Box 409
Sunnyvale, CA 94086
408-739-7700
Contact: A Enameit
■ Products & Services
Terminal controllers
Protocol converters
Voice digitizers

SILICON SYSTEMS INC
14351 Myford Rd
Tustin, CA 92680
714-731-7110
Contact: Alan Portnoy
■ Products & Services
Front-end processors
Message switchers
Modem sharing units
Digitized-voice processors
Code converters
Branch Sales Offices:

IL Buffalo Grove
Roger Hilderbrand
9 Fox Ct E
312-459-5690

MA Boxford
Jack Kindregan
Bowley Rd
617-887-2938

NY Glen Head
Steve Marks
109 Scudders Ln
516-676-5696

SINGER CO
LIBRASCOPE DIV
833 Sonora Ave
Glendale, CA 91201
213-244-6541
Contact: E T Pool
■ Products & Services
Message switchers
Microwave/laser systems
Add-on main memory
Digital plotters
Programmable terminals
Interactive terminals
Portable data entry terminals
Furniture, cabinets, terminal enclosures
Power supplies
Switches, data communications: automatic

SOFTWARE INTERNATIONAL
Elm Square
Andover, MA 01810
617-475-5040
Contact: P Desmond Crain
■ Products & Services
Applications packages
Branch Sales Offices:

CA El Monte
Western Regional Office SI
3204 Rosemead Blvd
213-573-0402

GA Atlanta
Southeast Regional Office SI
1000 Circle 75 Pkwy
404-955-3705

IL Des Plaines
Central Regional Office SI
1011 East Touhy Ave
312-298-3500

MA North Andover
Northeast Regional Office SI
203 Turnpike St
617-683-2447

NY Rye
Mid-Atlantic Regional Office SI
14 Rye Ridge Plaza
914-253-8050

TX Houston
Western Divisional Office SI
3845 FM 1960 West
713-444-3348

SOFTWARE RESULTS CORP
1229 W 3 Ave
Columbus, OH 43212
614-421-2094
Contact: Edward J Sadlowski
■ Products & Services
Front-end processors
Minicomputers
Computer/communications interfaces
Data communications consultants
Branch Sales Offices:

ENGLAND
London
Scicon Consultancy Ltd
49-57 Berner's St
44-1-580-5599

FRANCE
Nanterre 92000
Invector
6 Rue Watford
33-01-774-8081

SOLA, A UNIT OF GENERAL SIGNAL
1717 Busse Rd
Elk Grove Vill, IL 60007
312-439-2800
Contact: Bill Lucarz
■ Products & Services
Power Distribution-Regulation
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:

AL Huntsville
Cartwright & Bean Inc
555 Sparkman Dr
205-830-1540

AZ Phoenix
Zeus Inc
546 E Portland
602-253-6104

CA Pleasanton
Moulthrop Sales Inc
7080 Commerce Dr
415-846-0550

CA Costa Mesa
Berman-Graveley Co
350B Fischer Ave
714-549-2122

CO Denver
Zeus Inc
3333 Quebec St
303-321-4246

FL Orlando
Cartwright & Bean Inc
200 E Marks St
305-422-4531

FL Ft Lauderdale
Cartwright & Bean Inc
4000 N State Rd
305-735-4900

GA Atlanta
Cartwright & Bean Inc
3198 Cain's Hill Pl
404-233-2939

IL Chicago
Ind Reps Inc
5940 Touhy Ave
312-647-7755

IN Indianapolis
Baehr, Greenleaf & Assoc Inc
7098 N Shadeland
317-842-6204

LA Chalmette
Erickson Sales Inc
617 W Judge Perez Dr
504-271-1976

MA Norwood
JMG Inc
36 Plimpton Ave
617-762-5333

MI Southfield
R C Merchant & Co Inc
29260 Franklin Rd
313-354-4300

MI St Joseph
R C Merchant & Co Inc
815 Main St
616-983-7378

MN Minneapolis
Production Equipment & Components
7803 Bloomington Ave S
612-854-6191

MO Kansas City
Forristal-Young Sls Co
9010 E 50 Hwy
816-358-6771

MO St Louis
Forristal-Young Sls Co
8986 Manchester Rd
314-968-9975

NE Omaha
Forristal-Young Sls Co
11312 Martha Av
402-333-0800

NJ Cherry Hill
Trinkle Sls Inc
1010 Haddonfield-Berlin Rd
609-795-4200

NJ Englewood
Baum & Epstein Assoc Inc
16 W Palisade Ave
201-569-7600

NM Albuquerque
Zeus Inc
310 Val Verde SE
505-842-6633

NY Rochester
L-Mar Assoc
4515 Culver Rd
716-544-8000

NY E Syracuse
L-Mar Assoc
216 Tilden Dr
315-437-7779

NC Charlotte
Cartwright & Bean Inc
1165 S Commercial Ave
704-377-5673

NC Raleigh
Cartwright & Bean Inc
3948 Browning Pl
919-781-6560

OH Cincinnati
Baehr, Greenleaf & Assoc Inc
9505 Montgomery Rd
513-891-3826

OH Columbus
Baehr, Greenleaf & Assoc Inc
1429 King Ave
614-486-4046

OH Lakewood
Baehr, Greenleaf & Assoc Inc
14700 Detroit Ave
216-221-9030

OH Dayton
Baehr, Greenleaf & Assoc Inc
3300 S Dixie Dr
513-293-1102

OR Portland
Earl & Brown Co Inc
7719 SW Capitol Hwy
503-245-2283

TN Knoxville
Cartwright & Bean Inc
8705 Unicorn Dr
615-693-7450

TX Dallas
Erickson Sls Inc
8350 Meadow Rd
214-739-5833

TX Houston
Erickson Sales Inc
6833 S Gessner
713-498-2959

TX Austin
Erickson Sales Inc
2525 Wallingwood Dr
512-327-5486

UT Salt Lake City
Zeus Inc
1849 W N Temple
801-534-0500

WA Seattle
Earl & Brown Co Inc
320 2 West
206-284-1121

WI Milwaukee
Ind Reps Inc
631 N Mayfair Rd
414-259-0965

SOLID STATE CONTROLS
875 Dearborne Dr
Columbus, OH 43085
614-846-7500
Contact: Harlan W Bates
■ Products & Services
Uninterruptible power supplies, line correctors, etc

Want to receive announcements of new products? Turn to **UpDate Service Card, page 201.**

SORBUS SERVICE DIV OF MAI
50 E Swedesford Rd
Frazer, PA 19355
215-296-6000
Advertising page 168
Contact: Bill Whelan
■ Products & Services
Electrical-parameters test equipment
Technical control centers
Maintenance organizations

Branch Sales Offices:

AL Homewood
Sorbus Service Div of MAI
2805 Crescent Ave
205-871-5783

AL Mobile
Sorbus Service Div of MAI
404-457-5544

AK Phoenix
Sorbus Service Div of MAI
5033 North 19th Ave
602-246-1085

AK Tucson
Sorbus Service Div of MAI
2030 E Broadway
602-622-4983

CA San Rafael
Sorbus Service Div of MAI
4340 Redwood Hwy
415-472-4770

CA San Leandro
Sorbus Service Div of MAI
14826 Wicks Blvd
415-483-9862

CA Sacramento
Sorbus Service Div of MAI
3400 Watt Ave
916-488-5029

CA Stockton
Sorbus Service Div of MAI
209-946-0430

CA San Jose
Sorbus Service Div of MAI
1101 S Winchester BLvd
408-984-1947

CA Fresno
Sorbus Service Div of MAI
209-445-1768

CA Burbank
Sorbus Service Div of MAI
4201 Vanowen Pl
213-841-1973

CA Santa Barbara
Sorbus Service Div of MAI
805-643-3787

CA San Diego
Sorbus Service Div of MAI
7370 Opportunity Rd
714-565-7905

CA Anaheim
Sorbus Service Div of MAI
1440 S State College Blvd
714-991-0240

CO Denver
Sorbus Service Div of MAI
6000 E Evans Ave
303-758-5059

CO Colorado Springs
Sorbus Service Div of MAI
303-473-4640

CT East Hartford
Sorbus Service Div of MAI
800 Silver Ln
203-569-0880

FL Tampa
Sorbus Service Div of MAI
5401 W Kennedy Blvd
813-877-5937

FL Cocoa Beach
Sorbus Service Div of MAI
813-877-8771

FL Pensacola
Sorbus Service Div of MAI
404-457-5544

GA Atlanta
Sorbus Service Div of MAI
404-394-8994

GA Atlanta
Sorbus Service Div of MAI
2231 Perimeter Park
404-457-4451

GA Macon
Sorbus Service Div of MAI
404-457-4451

HI Honolulu
Sorbus Service Div of MAI
765 Amana St
808-941-7477

ID Boise
Sorbus Service Div of MAI
21 N Orchard
208-342-6421

IL Elmhurst
Sorbus Service Div of MAI
918 N Oaklawn Ave
312-279-0070

IL Peoria
Sorbus Service Div of MAI
309-674-7541

IL Springfield
Sorbus Service Div of MAI
217-544-8151

IL Moline
Sorbus Service Div of MAI
309-797-3232

IL Rockford
Sorbus Service Div of MAI
318 Park Ave
815-965-5208

IN South Bend
Sorbus Service Div of MAI
143 Dixie Way S
219-288-6144

IN Fort Wayne
Sorbus Service Div of MAI
3416 N Anthony Blvd
219-743-3090

IN Indianapolis
Sorbus Service Div of MAI
5335 N Tacoma Ave
317-259-1191

IA Des Moines
Sorbus Service Div of MAI
515-262-7945

KS Kansas City
Sorbus Service Div of MAI
3500 Rainbow Blvd
913-831-1700

KS Topeka
Sorbus Service Div of MAI
913-235-1373

KS Wichita
Sorbus Service Div of MAI
309 S Laura
316-262-2983

KY Louisville
Sorbus Service Div of MAI
317-638-7877

LA Metairie
Sorbus Service Div of MAI
3330 Lake Villa Dr
504-887-9131

LA Shreveport
Sorbus Service Div of MAI
714 Grand Ave
318-221-2315

LA Monroe
Sorbus Service Div of MAI
318-323-1082

MD Baltimore
Sorbus Service Div of MAI
1900 Sulphur Springs Rd
301-242-2336

MA Natick
Sorbus Service Div of MAI
209 W Central St
617-237-4550

MI Livonia
Sorbus Service Div of MAI
29200 Vassar Ave
313-478-8700

MI Saginaw
Sorbus Service Div of MAI
517-752-6241

MI Battle Creek
Sorbus Service Div of MAI
616-968-1162

MI Flint
Sorbus Service Div of MAI
313-235-5921

MI Lansing
Sorbus Service Div of MAI
517-489-6239

MI Wyoming
Sorbus Service Div of MAI
1945 28 SW
616-538-5770

MN Minneapolis
Sorbus Service Div of MAI
430 Oak Grove St
612-870-8974

MN Duluth
Sorbus Service Div of MAI
218-722-1564

MO Maryland Heights
Sorbus Service Div of MAI
929 Fee Fee Rd
314-434-7090

MO St Louis
Sorbus Service Div of MAI
10770 Indian Head
314-429-7406

MO Columbia
Sorbus Service Div of MAI
314-449-2318

NE Omaha
Sorbus Service Div of MAI
3321 Hickory St
402-342-6711

NV Reno
Sorbus Service Div of MAI
702-329-2476

NV Las Vegas
Sorbus Service Div of MAI
702-735-7802

NH Concord
Sorbus Service Div of MAI
603-225-5533

NJ Clifton
Sorbus Service Div of MAI
1030 Clifton Ave
201-779-5100

NM Albuquerque
Sorbus Service Div of MAI
505-243-0102

NY Melville
Sorbus Service Div of MAI
516-420-0115

NY White Plains
Sorbus Service Div of MAI
470 Manaroneck Ave
914-761-3801

NY Rochester
Sorbus Service Div of MAI
999 Buffalo Rd
716-235-6820

NY Cheektowaga
Sorbus Service Div of MAI
4245 Union Rd
716-631-9230

NY Albany
Sorbus Service Div of MAI
845 Central Ave
518-438-6201

NY Elmira
Sorbus Service Div of MAI
1408 Lake St
518-438-6201

NY Syracuse
Sorbus Service Div of MAI
202 Arterial Rd
518-438-6201

NY New York
Sorbus Service Div of MAI
122 E 42 St
212-867-4130

NY Hicksville
Sorbus Service Div of MAI
70 E Old Country Rd
516-681-8176

NC Charlotte
Sorbus Service Div of MAI
5700 Executive Center Dr
704-535-6970

NC Asheville
Sorbus Service Div of MAI
704-372-2941

OH Cincinnati
Sorbus Service Div of MAI
8075 Reading Rd
513-821-6300

OH Kettering
Sorbus Service Div of MAI
1582 W Dorothy Ln
513-821-6300

OH Findlay
Sorbus Service Div of MAI
419-422-4121

OH Toledo
Sorbus Service Div of MAI
4427 Talmadge Rd
419-475-5390

OH Cleveland
Sorbus Service Div of MAI
16101 Snow Rd
216-362-7230

OH Youngstown
Sorbus Service Div of MAI
216-759-2886

OH Akron
Sorbus Service Div of MAI
1423 Copley Rd
216-836-4958

OH Columbus
Sorbus Service Div of MAI
2202 S Hamilton Rd
614-864-7280

OK Tulsa
Sorbus Service Div of MAI
918-627-8386

OK Oklahoma City
Sorbus Service Div of MAI
405-232-3989

OR Portland
Sorbus Service Div of MAI
208 SE Oak St
503-222-3891

OR Salem
Sorbus Service Div of MAI
503-222-3891

OR Eugene
Sorbus Service Div of MAI
503-343-1437

PA King of Prussia
Sorbus Service Div of MAI
1015 W Ninth St
215-337-0811

PA Harrisburg
Sorbus Service Div of MAI
4751 Lindle Rd
717-939-9343

PA Pittsburgh
Sorbus Service Div of MAI
21 Yost Blvd
412-271-7131

PA Erie
Sorbus Service Div of MAI
814-454-6510

RI Cranston
Sorbus Service Div of MAI
1145 Reservoir Ave
401-943-6400

TN Memphis
Sorbus Service Div of MAI
2005 Nonconnah Blvd
901-345-2853

TN Nashville
Sorbus Service Div of MAI
1451 Elm Hill Pike
901-345-2853

TN Chattanooga
Sorbus Service Div of MAI
615-265-1335

TN Knoxville
Sorbus Service Div of MAI
615-525-1271

TN Oak Ridge
Sorbus Service Div of MAI
615-483-9593

TX Hurst
Sorbus Service Div of MAI
951 W Pipeline Rd
817-284-9464

TX Dallas
Sorbus Service Div of MAI
2600 Stemmons Fwy
214-631-1700

TX Waco
Sorbus Service Div of MAI
871-772-0110

TX Houston
Sorbus Service Div of MAI
4120 Southwest Fwy
713-621-7930

TX San Antonio
Sorbus Service Div of MAI
9033 Aero Ln
512-223-3121

TX Austin
Sorbus Service Div of MAI
512-837-2088

TX Corpus Christi
Sorbus Service Div of MAI
512-883-8901

TX Ft Hood
Sorbus Service Div of MAI
817-773-6007

TX Lubbock
Sorbus Service Div of MAI
806-797-2733

TX El Paso
Sorbus Service Div of MAI
915-532-7135

UT Salt Lake City
Sorbus Service Div of MAI
2161 Regent St
801-487-8679

VA Vienna
Sorbus Service Div of MAI
2095 Chain Bridge Rd
703-893-6698

VA Richmond
Sorbus Service Div of MAI
2016 N Hamilton St
804-355-2643

VA Norfolk
Sorbus Service Div of MAI
1 Koger Executive Ctr
804-355-2643

WA Tukwila
Sorbus Service Div of MAI
637 Strander Blvd
206-575-1202

WA Spokane
Sorbus Service Div of MAI
509-624-7794

WV Parkersburg
Sorbus Service Div of MAI
304-422-1323

WI West Allis
Sorbus Service Div of MAI
9618 W Greenfield Ave
414-257-2715

WI Appleton
Sorbus Service Div of MAI
414-734-4012

WI Oshkosh
Sorbus Service Div of MAI
414-734-4012

WI Racine
Sorbus Service Div of MAI
414-634-3579

WI Wausau
Sorbus Service Div of MAI
715-845-8107

WI Madison
Sorbus Service Div of MAI
110 Fordem Ave
608-241-1616

WI Beloit
Sorbus Service Div of MAI
608-754-8011

SOROC TECHNOLOGY INC
165 Freedom Ave
Anaheim, CA 92801
714-992-2860
Contact: Liz Catini
■ Products & Services
Graphic display terminals
Programmable terminals
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:
NY Hartsdate
Soroc Technology, Inc
111 N Central Ave
914-328-0008

SOUTH CENTRAL BELL TELEPHONE CO
Box 771;19 Fl-Hq Bldg
Birmingham, AL 35201
205-321-1000
Contact: W E DuPre
■ Products & Services
Message (including telegraph) carriers
Multiplexers, frequency division
Multiplexers, time division
Channel service units
Modems, limited distance
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)

If you know the name of the product and want to know who makes it, turn to **Products & Services Directory, page 7.**

SOUTHERN PACIFIC COMMUNICATIONS SERVICE CO
1700 Old Meadow Rd
McLean, VA 22102
703-734-3232
Contact: Keith Hathcock
■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX, EPBX, etc.)
Microwave/laser systems
Data communications consultants
Branch Sales Offices:
CA Burlingame
SP/CSC Western Region
408-559-0222

NY New York
SP/CSC Northwest Region
212-286-0370

SOUTHERN SILKSCREEN INC
2412 Distribution Street
Charlotte, NC 28203
704-377-6717
Contact: J R Cole

SOUTHERN TELEPHONE SUPPLY
PO Box 80375
Atlanta, GA 30366
404-447-8410
Contact: H S Fisher
■ Products & Services
Telephone companies
Multiplexers, statistical (intelligent)
Channel service units
Modems, limited distance
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Programmable terminals
Branch Sales Offices:
CA City of Industry
Southern Telephone Supply Co
17421-A East Gale Ave
213-912-4521

GA Norcross
Southern Telephone Supply Co
6000 Peachtree Ind Blvd
404-447-8410

IN Ft Wayne
Southern Telephone Supply Co
4051 North Clinton
219-482-9161

NE Lincoln
Southern Telephone Supply Co
1400 Cushman Dr
402-423-0584

NJ Somerset
Southern Telephone Supply Co
14E World's Fair Dr
201-560-1430

TX Dallas
Southern Telephone Supply Co
10720 Composite Dr
214-358-1582

LOGE/SPATIAL DATA SYSTEMS
PO Box 978, 508 So Fairview Ave
Goleta, CA 93116
805-967-2383
Contact: M Stanley Schlosser

SP-DMS
1700 Old Meadow Rd
McLean, VA 22102
703-821-3700
Contact: T Cerrito
■ Products & Services
Specialized carriers
Facsimile terminals
Branch Sales Offices:
AZ Phoenix
SP/DMS
3550 N Central Ave
601-265-4110

CA Burlingame
SP/DMS
840 Hinckley Rd
415-697-4992

CA San Diego
S/DMS
8304 Claremont Mesa Blvd
714-560-7252

CA Torrance
SP/DMS
19401 S Vermont Ave
213-515-5053

CT Westport
SP/DMS
Connecticut Office Bldg 21 Charles St
203-222-0600

GA Atlanta
SP/DMS
Three Exchange Pl 2300 Peachford Rd
404-452-8141

IL Des Plaines
SP/DMS
2200 East Devon Ave
312-635-8500

MA Boston
SP/DMS
79 Milk St
617-482-8868

MO St Louis
SP/DMS
11 Westport Plaza
314-878-1211

NY New York
SP/DMS
1500 Broadway Suite 1803
212-921-4070

OH Beachwood
SP/DMS
24200 Chagrin Blvd
216-831-5800

PA Philadelphia
SP/DMS
2 Penn Center Plaza
215-568-4228

PA Pittsburgh
SP/DMS
429 4th Ave
412-765-0500

TX Carrolton
SP/DMS
1055 Trend Dr
214-242-8681

SPECTRA PHYSICS
3333 North First St
San Jose, CA 95134
408-946-6080
Branch Sales Offices:
NJ Piscataway
Spectra-Physics
366 S Randolphville Rd
201-981-0390
TX Houston
Spectra-Physics
5201 Mitchelldale
713-688-9886

SPERRY UNIVAC
PO Box 500
Blue Bell, PA 19424
215-542-4011
■ Products & Services
Front-end processors
Modem sharing units
Remote network processors
Modems, multipoint
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
DDP systems
Minicomputers
Add-on main memory
Cartridges
Cartridge drives
Cassettes
Cassette drives
Disk drives, floppy
Tape, magnetic
Tape drives, magnetic
Tape punch/reader, paper
Bar code readers
Batch terminals
Programmable terminals
Interactive terminals
Remote line printers
Remote job entry terminals
Video data terminals (KSR)
Data communications consultants
Branch Sales Offices:
AL Birmingham
Sperry Univac
2 Metroplex Dr
205-871-4655
AZ Phoenix
Sperry Univac
301 W Osborn Rd
602-264-3565
CA Los Angeles
Sperry Univac
10880 Wilshire Blvd
213-475-8661
CA Los Angeles
Sperry Univac
3250 Wilshire Blvd
213-381-7841
CA Sacramento
Sperry Univac
621 J St
916-444-3480
CA San Francisco
Sperry Univac
Three Embarcadero Center
415-433-0750

Products are listed alphabetically in the **Products & Services Directory, page 7.**

CO Englewood
Sperry Univac
7503 Marin Dr
303-773-1177
CT Milford
Sperry Univac
30 Commerce Park Rd
203-877-1281
CT Windsor
Sperry Univac
90 Lamberton Rd
203-688-6461
FL Miami Beach
Sperry Univac
8395 NW 53rd St
305-651-0734
GA Atlanta
Sperry Univac
5775 C Peachtree
404-256-5690
IL Chicago
Sperry Univac
5725 NE River Rd
312-693-4600
IL Chicago
Sperry Univac
300 N State St
312-527-3000
IN Indianapolis
Sperry Univac
3500 DePauw Blvd
317-297-4686
IA W DesMoines
Sperry Univac
1025 Ashworth Rd
515-223-2800
KS Shawnee Mission
Sperry Univac
4210 Johnson Dr
913-362-4770
LA Baton Rouge
Sperry Univac
7600 Airline Hwy
504-924-7211
MD Patuxent River
Sperry Univac
Rt 1 Box 2
301-825-8410
MA Wellesley
Sperry Univac
55 William St
617-237-9516
MI Troy
Sperry Univac
3221 N Big Beaver Rd
313-444-4910
MN Bloomington
Sperry Univac
3001 Metro Dr
612-854-1331
MO St Louis
Sperry Univac
12101 Woodcrest Exec Dr
314-727-2590
NJ Montclair
Sperry Univac
205 Claremont Ave
201-783-5500
NY Albany
Sperry Univac
1500 Central Ave
518-869-0231
NY Williamsville
Sperry Univac
5500 Main St
716-633-2700
NY New York
Sperry Univac
1290 Ave the Americas
212-956-2121

NY Huntington Sta
Sperry Univac
1 Huntington Quadrangle
516-420-1108
NC Charlotte
Sperry Univac
301 S McDowell St
704-375-1491
OH Cincinnati
Sperry Univac
7162 Reading Rd
513-351-6100
OH Independence
Sperry Univac
4500 Rockside Rd
216-447-0700
OK Tulsa
Sperry Univac
7030 S Yale
918-492-4440
PA Wayne
Sperry Univac
480 Swedesford Rd
215-293-0300
PA Lemoyne
Sperry Univac
Erford Rd Rte 15
717-234-3141
PA Pittsburgh
Sperry Univac
Stanwix at 4 Ave
412-391-2000
TN Memphis
Sperry Univac
1355 Lynnfield Rd
901-761-2740
TX Bellaire
Sperry Univac
6700 W Loop S
713-661-2053
TX Houston
Sperry Univac
3 Greenway Plaza E
713-623-8700
TX Dallas
Sperry Univac
7540 LBJ Freeway
214-387-1100
TX Austin
Sperry Univac
512 E Riverside Dr
512-444-6653
VA Arlington
Sperry Univac
1901 N Moore St
703-841-1122
VA Arlington
Sperry Univac
1501 Wilson Blvd
703-841-1122
WA Seattle
Sperry Univac
Box 21108
206-682-1593
WI Brookfield
Sperry Univac
200 Executive Dr
414-784-4000
ALBERTA, CANADA
Calgary
Sperry Univac
81-110 12th Ave SW
403-269-6741
ALBERTA, CANADA
Edmonton
Sperry Univac
9942 108th St
403-429-4268

BRITISH COLUMBIA, CANADA
Vancouver
Sperry Univac
#906-1177 W Hastings St
604-688-6731

MANITOBA, CANADA
Winnipeg
Sperry Univac
305 Broadway Ave
204-942-5221

ONTARIO, CANADA
Mississauga
Sperry Univac
55 City Centre Dr
416-270-3030

ONTARIO, CANADA
Ottawa
Sperry Univac
85 Albert St
613-237-4423

ONTARIO, CANADA
Hamilton
Sperry Univac
105 Main St E
416-525-8433

ONTARIO, CANADA
Toronto
Sperry Univac
181 University Ave
416-962-5250

QUEBEC, CANADA
Montreal
Sperry Univac
2050 Place du Canada
514-875-5432

QUEBEC, CANADA
Quebec City
Sperry Univac
2 Place Quebec
418-647-2323

SPERRY UNIVAC, MCO
17900 Von Karman
Irvine, CA 92714
714-754-6900
Contact: S Hubner
■ Products & Services
Concentrators
Front-end processors
Remote network processors
Modem eliminators
Local networks
Minicomputers
Add-on main memory
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Tape, magnetic
Tape drives, magnetic
Tape, paper
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote line printers
Terminal controllers
Terminal interfaces
Applications packages
DDP systems software
Local network software
Operating systems
Computer/communications interfaces
Educational services
Maintenance organizations
Branch Sales Offices:

AZ Phoenix
Sperry Univac
301 W Osborn Rd
602-264-3565

CA Irvine
Sperry Univac
17900 Von Karman Ave
714-754-6900

CA San Diego
Sperry Univac
4393 Viewridge Ave
714-268-3600

CA Santa Clara
Sperry Univac
3300 Scott Blvd
408-496-3333

CA San Francisco
Sperry Univac
3 Embaracadero Center
415-772-1100

CA Los Angeles
Sperry Univac
3250 Wilshire Blvd
213-380-5500

CO Englewood
Sperry Univac
7503 Marin Dr
303-773-1177

CT Milford
Sperry Univac
30 Commerce Pk
203-877-1281

DC Washington
Sperry Univac
2233 Wisconsin Ave
202-338-8893

FL Orlando
Sperry Univac
3165 McCrory Pl
305-894-8431

FL Miami
Sperry Univac
8395 NW 53rd St
305-651-0734

GA Atlanta
Sperry Univac
5775 C Peachtree-Dunwoody Rd NE
404-256-5690

IL Chicago
Sperry Univac
8600 W Bryn Mawr Ave
312-693-4600

KS Shawnee Mission
Sperry Univac
4210 Johnson Dr
913-362-4770

LA Metairie
Sperry Univac
2800 Veterans Hwy
504-838-8023

MD Lutherville
Sperry Univac
1300 Bellona Ave
301-825-8410

MA Wellesley
Sperry Univac
60 William St
617-237-1000

MI Troy
Sperry Univac
3221 Big Beaver Rd
313-649-0400

MN Minneapolis
Sperry Univac
3001 Metro Dr
612-854-1331

MO St Louis
Sperry Univac
12101 Woodcrest Executive Dr
314-576-7000

NJ Parsippany
Sperry Univac
199 Pomeroy Rd
201-428-1208

NY Rochester
Sperry Univac
160 Allens Creek Rd
716-442-1880

NY New York
Sperry Univac
1290 Ave of the Americas
212-484-4550

NC Charlotte
Sperry Univac
301 S McDowell St
704-375-1491

OH Independence
Sperry Univac
4500 Rockside Rd
216-447-0700

OH Dayton
Sperry Univac
1010 Woodman Dr
513-258-1458

PA Wayne
Sperry Univac
12 Valley Forge Executive Mall
215-293-0300

PA Pittsburgh
Sperry Univac
Cliff Mine Rd
412-788-6960

TX Dallas
Sperry Univac
7540 LBJ Freeway
214-387-1100

TX Bellaire
Sperry Univac
6700 West Loop S
713-661-2053

TX Austin
Sperry Univac
220 E Foremost
512-282-3200

VA Richmond
Sperry Univac
1503 Santa Rosa Rd
804-288-4003

WA Bellevue
Sperry Univac
330 12th Ave NE
206-454-3930

SPI DATA
255 S Rengstorff Ave
Mt View, CA 94040
415-965-0906
Contact: Terry Reese
■ Products & Services
Data security devices: encoder/decoders
Data security devices: software security modules

SPSS INC
444 N Michigan Ave
Chicago, IL 60611
312-329-2400
Contact: Roger Sack
■ Products & Services
Applications packages
Branch Sales Offices:
NETHERLANDS
Rotterdam 3011
Pakhoed Computer Services B V
60-68 Boompjes
010-302363

STANDARD ELECTRIC TIME CORP
805 S Maumee St
Tecumseh, MI 49286
517-423-2111
Contact: Howard Weed
■ Products & Services
Fire detection/protection equipment

Branch Sales Offices:
CA Paramount
Standard Electric Time Corp
15721 Texaco Ave
213-634-6887

CA San Francisco
Standard Electric Time
1485 Bayshore Blvd
415-467-8796

DC Chantilly
Standard Electric Time
14650 Lee Rd
703-968-7811

IL Bridgeview
Standard Electric Time Corp
7500 West 99th Pl
312-430-4770

MA Springfield
Standard Electric Time Corp
89 Logan St
413-732-1141

NJ Fairfield
Standard Electric Time
193 Fairfield Rd
201-227-9190

PA Bensalem
Standard Electric Time
3569 Bristol Pike
215-639-2055

VA Richmond
Standard Electric Time
360 West Office Bldg
804-276-6776

STANDARD ENGINEERING
44800 Industrial Dr
Fremont, CA 94538
415-657-7555
Contact: Dan Janzen
■ Products & Services
Front-end processors
Modems, limited distance
Modems, multipoint
Modems, multiport
Local network interfaces
Microcomputer/ microprocessor systems
Minicomputers
Database processors
Electronic mailboxes
Batch terminals
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Word processors, communicating
Computer/communications interfaces
Protocol converters
Branch Sales Offices:
CA Fremont
Standard Engineering
International
44755 Grimmer Blvd
415-657-7555

PA Center Square
Standard Engineering
1166 Dekalb Pike
215-279-9260

STANDARD MICROSYSTEMS
35 Marcus Blvd.
Hauppauge, NY 11788
516-273-3100
Contact: Vince Rende
■ Products & Services
Terminal controllers
Computer/communications interfaces

STANFORD TELECOMMUNICATIONS INC
1195 Bordeaux Dr
Sunnyvale, CA 94086
408-734-5300
Contact: J J Spilker
■ Products & Services
Specialized carriers
Multiplexers, time division
Earth stations
Modems, broadband group (to 50 kb/s)
Network management centers
Data communications consultants
Branch Sales Offices:
CA El Segundo
STI
2230 E Imperial Hwy
213-640-2900

VA McLean
STI
6888 Elm St
703-893-3220

STANTRON DIV
WYCO METAL PROD
6900-6918 Beck Ave
N Hollywood, CA 91605
213-875-0800
Contact: Guy A Tessier
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
AZ Phoenix
Shefler Kahn Co
2017 N 7 St
602-257-9015

AR Sherwood
Wallace Electronics
12 Houston Dr
501-835-0978

CA Los Angeles
Ed Landa Co
1618 Cotner Av
213-879-0770

CA Pleasanton
Moulthrop Sales
7080 Commerce Dr
415-846-0550

CO Golden
J F Hurlbut Co
622 Gardenia Ct
303-279-7796

CT Canton Center
Tekdata
Cherry Brook Rd
203-693-0719

FL Tampa
Wallace Electronics
110101 Carrollwood Dr
800-334-3518

GA Jonesboro
Wallace Electronics
8571 Kennesaw Ct
404-471-6297

HI Honolulu
J C Electronics
2656 Waiwai Loop
808-836-3337

IL Chicago
Berndt Assoc
6200 N Hiawatha Ave
312-283-0713

IN Carmel
Berndt Assoc
1089 Third Ave SE
317-844-0114

KS DeSoto
Midtec
7702 Mize
913-441-6565

MD Ellicott City
Scientific Assoc
8730 Town & Country Blvd
301-321-1411

MA Chelmsford
Tekdata
6 Kidder Rd
617-256-9061

MI Jackson
Norwood Scroggs Co
2221 Arbor Hills Rd
517-750-1170

MN Minneapolis
Berndt Assoc
2738 Winnetka Ave No
612-546-2021

MO Florissant
Midtec
110 South 67
314-837-5200

NJ Wayne
GT Assoc
637 Valley Rd
201-694-6040

NM Albuquerque
Shefler Kahn Co
10200 Menaul NE
505-296-0749

NY Rochester
Gislason Sales
82 St Paul St
716-454-4741

NC Kernersville
Wallace Electronics
127 Armfield St
919-996-2742

OH Cincinnati
John O Olsen
3604 Coral Gables Rd
513-574-7711

OK Tulsa
Barry Sales
3035 E Skelly Dr
918-749-7775

OR Beaverton
Don Smith Sales
4095 SW 144th St
503-643-8020

PA Pittsburgh
John O Olsen
104 Elatan Dr
412-279-2550

TN Chattanooga
Wallace Electronics
736 Ashley Forest Dr
615-870-2080

TX Richardson
Barry Sales
709 Lingco Dr
214-234-0255

TX Houston
Barry Sales
6400 Westpark Dr
713-784-5860

UT Salt Lake City
J F Hurlbut
3636 W 2100 So
801-973-4443

VA Fairfax
Scientific Assoc
9512 A Lee Hwy
703-385-0600

WA Seattle
Don Smith Sales
711 N Northlake Way
206-633-3160

WI Milwaukee
Berndt Associates
9401 Beloit Rd
414-545-8400

PUERTO RICO
Playa Ponge
Distributronics Inc
Comercio 56
809-843-3321

ONTARIO, CANADA
Mississauga
Willagen Elect
1585 Brittania Rd
416-678-1379

QUEBEC, CANADA
Montreal
Willagen Elect
6170 Rue Perinault
514-331-4283

INDIA
Huq Manson
Aurora Intl
13/2 Toynbee Circular Dr

INDIA
New Dehli
Watson Mfg Co
Safdarjang Enclave
665401

ISRAEL
Tel Aviv
RCM Computers Ltd
Feierberg St 24
03-224922

MEXICO
Mexico D F
C E L
Mar Jonico 50B
905-399-9800

PERU
Lima
Arvens S A
PSJE Adan Meja 103 of 33
71-6229

PHILIPPINES
Manila
Educational Enrichment Ctr
405 Altura St
62-32-20

STC COMMUNICATIONS CORP
SUB OF STORAGE TECHNOLOGY CORP
3400 Industrial Ln
Broomfield, CO 80020
303-673-8000
Contact: James Stratton
■ Products & Services
Concentrators
Branch Sales Offices:

CA Culver City
STC Communications Corp;Sub of Storage Technology Corp
5901 Green Valley Circle 310
213-642-1800

CA San Francisco
STC Communications Corp;Sub of Storage Technology Corp
2001 Union St
415-563-2824

GA Atlanta
STC Communications Corp;Sub of Storage Technology Corp
5901-A Peachtree Dunwoody Rd
404-393-9898

IL Chicago
STC Communications Corp;Sub of Storage Technology Corp
233 South Wacker Dr
312-876-1528

MD Silver Spring
STC Communications Corp;Sub of Storage Technology Corp
10750 Columbia Pike 302
301-593-9660

MI Southfield
STC Communications Corp;Sub of Storage Technology Corp
3000 Town Center
313-354-0850

NJ Mountainside
STC Communications Corp;Sub of Storage Technology Corp
1299 Rte 22
201-233-7981

NY New York
STC Communications Corp;Sub of Storage Technology Corp
1250 Broadway
212-695-4195

PA Pittsburgh
STC Communications Corp;Sub of Storage Technology Corp
200 Fleet St
412-922-2971

TX Dallas
STC Communications Corp;Sub of Storage Technology Corp
14800 Quorum Dr
214-387-4845

ONTARIO, CANADA
Toronto
STC Communications Corp;Sub of Storage Technology Corp
272 Galaxy Blvd Rexdale
416-675-3350

ENGLAND
London W8 4Br
STC Communications Corp;Sub of Storage Technology Corp
10-12 Old Court Pl/Kensington
938-1991

FRANCE
Paris CEDEX 15
STC Communications Corp;Sub of Storage Technology Corp
BD 96, 3 Rue de L'Arrive 75749
538-6029

JAPAN
Tokyo 107
STC Communications Corp;Sub of Storage Technology Corp
Taneda bldg, 8F, 2-5, 1-Chome/Moto Akasaka, Minato-Ku
470-4871

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STEWART WARNER DATAFAX CORP
1300 N Kostner Ave
Chicago, IL 60651
312-292-3268
Contact: T O Doner

STORAGE TECHNOLOGY CORP
2270 S 88th St
Louisville, CO 80027
303-673-5151
Contact: Russell Drew
■ Products & Services
Concentrators
Add-on main memory
Disk drives, large
Tape drives, magnetic
Branch Sales Offices:

AL Birmingham
Storage Technology Corporation
213 Gadsden Hwy
205-836-1939

AZ Phoenix
Storage Technology Corporation
5039 N 19th Ave
602-997-7255

CA Huntington Beach
Storage Technology Corp
16162 Beach Blvd
714-848-8989

CA San Francisco
Storage Technology Corp
2001 Union St
415-563-2824

CA Los Angeles
Storage Technology Corp
10801 National Blvd
213-470-2675

CA Walnut Creek
Storage Technology Corporation
47 Quail Ct
415-932-0516

CA La Jolla
Storage Technology Corporation
3344 N Torrey Pines Ct
213-470-2675

CT East Hartford
Storage Technology Corp
53 Connecticut Blvd
203-568-8980

CT Georgetown
Storage Technology Corporation
4 Old Mill Rd
203-544-9357

CT Denver
Storage Technology Corporation
7290 Samuel Dr
303-427-6254

FL Winter Park
Storage Technology Corporation
400 N New York Ave
305-647-2314

FL Hollywood
Storage Technology Corporation
1720 Harrison Street
305-922-4503

FL Tampa
Storage Technology Corp
5601 Mariner St
813-877-8195

FL Jacksonville
Storage Technology Corp
1914 Beachway Rd
904-396-0144

GA Atlanta
Storage Technology Corp
5600 Roswell Rd NE
404-256-2678

IL Chicago
Storage Technology Corp
233 S Wacker Dr
312-876-1520

IL Peoria
Storage Technology Corporation
414 Hamilton Blvd
309-676-4605

IL Springfield
Storage Technology Corporation
1 West Old State Capitol Plaza
217-525-1165

IN Indianapolis
Storage Technology Corporation
101 W Washington St
317-634-2729

IA Des Moines
Storage Technology Corporation
600 5th Ave Plaza
515-282-4377

KS Shawnee Mission
Storage Technology Corporation
4220 Johnson Dr
913-236-7744

KY Louisville
Storage Technology Corporation
945 S 4th St
502-589-4108

MD Silver Spring
Storage Technology Corp
10750 Columbia Pike
301-593-9660

MD Baltimore
Storage Technology Corp
6041 Security Blvd
301-594-1084

MD Baltimore
Storage Technology Corp
20 S Charles St
301-962-5503

MA Waltham
Storage Technology Corporation
391 Totten Pond Rd
617-890-9114

MI Southfield
Storage Technology Corp
3000 Town Center
313-354-0850

MI E Lansing
Storage Technology Corporation
4970 Northwind Dr
517-332-8609

MN Minneapolis
Storage Technology Corporation
3050 Metro Dr
612-854-7556

MS Jackson
Storage Technology Corporation
1755 Leila Dr
601-981-5556

MO Clayton
Storage Technology Corp
230 S Bemiston Ave
314-721-1000

NE Omaha
Storage Technology Corp
7171 Mercy Road
402-397-5708

NJ Mountainside
Storage Technology Corporation
1299 US Route 22
201-233-7981

NY New York
Storage Technology Corp
405 Lexington Ave
212-972-9484

NY Hicksville
Storage Technology Corporation
161 Levittown Pkwy
516-938-9899

NY Mount Kisco
Storage Technology Corporation
4 Kenisco Dr
914-241-3662

NY Rochester
Storage Technology Corporation
120 Allens Creek Rd
716-442-1400

NC Charlotte
Storage Technology Corporation
Woodlawn Green Woodlawn Rd
704-523-2543

NC Greensboro
Storage Technology Corporation
2306 W Meadowview Rd
919-852-0675

OH Cleveland
Storage Technology Corp
1300 E 9 St
216-621-0254

OH Cincinnati
Storage Technology Corporation
120 West 5th St
513-381-0125

OH Columbus
Storage Technology Corporation
1631 Northwest Prof Plaza
614-451-7491

OK Tulsa
Storage Technology Corporation
4833 S Sheridan Rd
918-664-8450

OK Oklahoma City
Storage Technology Corp
2200 Classen
405-521-0934

OR Portland
Storage Technology Corporation
6443 SW Beaverton Hwy
503-292-0739

PA Bala Cynwyd
Storage Technology Corp
111 Presidential Blvd
215-667-3327

PA Pittsburg
Storage Technology Corporation
200 Fleet St
412-922-2971

TN Nashville
Storage Technology Corporation
4741 Trousdale Dr
615-331-6859

TX Dallas
Storage Technology Corp
14330 Midway Rd
214-387-4845

TX Houston
Storage Technology Corp
8552 Katy Fwy
713-464-3022

TX San Antonio
Storage Technology Corp
Parkway Plaza 10202 Hertiage
512-340-0424

UT Salt Lake City
Storage Technology Corporation
1331 State
801-486-3433

VA Richmond
Storage Technology Corporation
6767 Forest Hill Ave
804-272-3212

WA Mercer Island
Storage Technology Corporation
3010 77th Ave
206-232-2004

WI Milwaukee
Storage Technology Corporation
622 N Water St
414-276-2022

ALBERTA, CANADA
Edmonton
Storage Technology of Canada Ltd
10235-101 St
403-428-0998

BRITISH COLUMBIA, CANADA
Vancouver
Storage Technology of Canada Ltd
2210 650 W Georgia St
604-687-3646

ONTARIO, CANADA
Rexdale/Toronto
Storage Technology of Canada Ltd
272 Galaxy Blvd
416-675-3350

ONTARIO, CANADA
Ottawa
Storage Technology of Canada Ltd
Tower A Place de Ville
613-237-8886

QUEBEC, CANADA
Montreal
Storage Technology of Canada Ltd
1 Place de Commerce
514-761-5861

QUEBEC, CANADA
St Foy
Storage Technology of Canada Ltd
399 Rue Morse
418-683-5542

AUSTRALIA
Artarmon
Storage Technology of Australia Pty Ltd
401 Pacific Hwy
61-2-438-3088

BELGIUM
Bruxelles
Storage Technology International/SA
47 Boulevard du Souverain
32 2 660-4948

ENGLAND
London
Storage Technology Ltd
10-12 Old Court Pl, Kensington
44¢1-937-9638

ENGLAND
Middlesex
Storage Technology Limited
2 Rubastic Rd Southall
44 1 571-0062

FRANCE
78310 Maurenas
Storage Technology Corporation/SA
5 Allee du Bourbonnais
33 3 051-6146

GERMANY, WEST
Frankfurt
Storage Technology GmbH
Genferstrasse 11

GERMANY, WEST
Duesseldorf-Heerdt
Storage Technology GmbH
Burgunderstrasse 9
49 211 500032

GERMANY, WEST
Hamburg
Storage Technology GmbH
Alte Volksparkstrasse 24
49 40 544931

GERMANY, WEST
Hannover
Storage Technology GmbH
Raschplatz 5
49 511 333217

GERMANY, WEST
Munich
Storage Technology GmbH
Plinganserstrasse 112
49 89 7231051

GERMANY, WEST
Storage Technology Corporation
Viahingerstrasse 3;7000
Stuttgart 80
49 711 714836

GUYANA
Camp Hill
Storage Technology Corporation
1104 Fernwood Ave
717-761-3630

ITALY
Roma
Storage Technology Italia SPA
Via Birmania 83
39 6 5921193

ITALY
Milan
Storage Technology Italia SPA
Corso Europa 12
39 2 5456331

JAPAN
Minato-ku, Tokyo
STC Japan Ltd
Taneda Bldg 8F 2-5 1-Chrome;Moto Akasaka
81¢3-470-4871
NETHERLANDS
Amstelveen
Storage Technology/BV
Maalderij 21 1185 ZB
31 20 472231

STROMBERG-CARLSON CORP
Box 1698
Sanford, FL 32771
305-323-1260
Contact: Donald L Hoffman
■ Products & Services
Branch exchanges—computerized (CBX)
Branch exchanges—private (PBX, PABX, etc.)
Branch exchanges—programmable (IBX, EPBX, etc.)
Concentrators
Teleconferencing networks
Power Distribution-Regulation
Educational services
Maintenance organizations
Branch Sales Offices:
CA Foster City
Stromberg-Carlson
551 Pilgrim Dr
415-574-9211
GA Norcross
Stromberg-Carlson
1862 Enterprise Dr
404-448-8980
IL Schaumburg
Stromberg-Carlson
830 E Higgins Rd Box 6543
312-885-6543
MO Kansas City
Stromberg-Carlson
2700 Rockcreek Pkwy
816-421-6618
PUERTO RICO
Hato Rey
Stromberg-Carlson
1508 Banco Popular Ctr
GREECE
Athens
Stromberg-Carlson
Michalakopoulon 56
745-386/87/88
HONG KONG
Hong Kong
Stromberg-Carlson
1437 Swire House
5-220640

STRUCTURAL CONCEPTS CORP
17237 Van Wagoner Rd
Spring Lake, MI 49456
616-846-3300
Contact: Randy Sherwood
■ Products & Services
Furniture, cabinets, terminal enclosures

STSC INC
7316 Wisconsin Ave
Bethesda, MD 20014
301-657-8220
Contact: Robert J Schmidt
■ Products & Services
Data communications consultants
Timesharing/service bureaus
Branch Sales Offices:
CA Woodland Hills
STSC Inc
21243 Ventura Blvd
213-340-4611
CA San Francisco
STSC Inc
1 Market Plaza Bldg
415-777-4357
CA Santa Monica
STSC, Inc
2900 31st St
213-450-4611
CO Englewood
STSC Inc
7965 E Prentice Ave
303-779-8878
CO Englewood
Resource Systems Inc
7965 E Prentice Ave
303-779-6909
CT Hartford
STSC Inc
111 Pearl St
203-549-0107
HI Kailua
STSC Inc
1269 Maleko St
808-261-3751
IL Oak Brook
STSC Inc
1550 Spring Rd
312-530-7600
MD Bethesda
STSC Inc
7101 Wisconsin Ave
301-986-1750
MD Bethesda
MTSC Inc
4330 E West Hwy
301-951-4200
MA Boston
STSC Inc
462 Boylston St
617-267-6864
MI Detroit
STSC Inc
100 Renaissance Ctr
313-259-0220
NY New York
APL*Plus Int'l
747 Third Ave
212-751-9305
NY Rochester
STSC Inc
3000 Winton Rd S
716-442-5281
NY Elmsford
STSC Inc
11 Clearbrook Rd
914-347-5560
NC Chapel Hill
STSC Inc
400 Eastowne Dr
919-493-2478
PA Philadelphia
STSC Inc
The Bourse Bldg
215-627-5300
TX Dallas
STSC Inc
1525 Elm St
214-263-4577
TX Houston
STSC Inc
11 Greenway Plaza
713-850-9400
ENGLAND
London
APL*Plus Ltd
50-52 Chancery Ln
01-242-8135

FRANCE
Paris
Societe de Traitements et de Services Conversationnels
Tour Neptune;Cedex #20
773-7964
SPAIN
Madrid-20
APL Informatica SA
Rosario Pino 6
279-47-84

SUBSYSTEM ENGINEERING
1833 E 17th St
Santa Ana, CA 92701
714-972-8255
Contact: Kevin Muniz
■ Products & Services
Maintenance organizations

SUPPORT SYSTEMS INTERNATIONAL
150 S Second St at Ohio
Richmond, CA 94801
415-234-9090
Contact: Richard St John
■ Products & Services
Cables, electrical prefabricated extending
Computer/communications interfaces
Data access arrangement devices
Data jacks and plugs
Switches, data communications: manual
Branch Sales Offices:
CA Richmond
Support Systems International
150 S Second St
415-234-9090

SYKES DATATRONICS
159 E Main St
Rochester, NY 14604
716-325-9000
Contact: Paul R Soscia
■ Products & Services
Message switchers
Remote network processors
DDP systems
Local networks
Microcomputer/ microprocessor systems
Disk drives, floppy
Disks, floppy
Electronic mailboxes
Floppy disk recorders
Tape, magnetic
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Terminal controllers
Video data terminals (KSR)
Word processors, communicating
Applications packages
DDP systems software
Local network software
Word processing packages
Branch Sales Offices:
CA Mountain View
Sykes Datatronics
2680 Bayshore Frontage Rd
415-965-4496
IL Arlington Hills
Sykes Datatronics
2015 S Arlington Hts Rd
312-640-9820
MO St Louis
Sykes Datatronics
425 N New Ballas Rd
314-872-9920

NY New York
Sykes Datatronics
50 E 42nd St
212-490-6500
VA Falls Church
Sykes Datatronics
13 Tysons Office Pk, 7655
Leesburg Pike
703-356-7800
ENGLAND
Twickenham
Sykes Datatronics
Regal House, London Road
01 891-4796

SYNAPSE COMPUTER CORP
801 Buckeye Ct
Hilpitas, CA 95035
408-946-3191
Contact: Stan Joseph
■ Products & Services
Microcomputer/ microprocessor systems

SYNTEST CORPORATION
40 Locke Dr
Marlboro, MA 01752
617-481-7827
Contact: Curtis P Hoffman
■ Products & Services
Remote job entry terminals
Teleprinters, impact
Branch Sales Offices:
CA Encino
King Eng Inc
17333 Rancho St
213-981-8677
FL Satellite Beach
Reynolds and Assoc Inc
476 N AIA
305-773-4700
IN Columbus
Miltronics
3809 Colonial Dr
812-376-6321
MD Silver Spring
Source Assoc
10300 Naglee Rd
301-431-0587
MA Waltham
Daner Hayes
296 Newton St
617-894-7290
MA Waltham
Digital Sales Assoc
9 Spring St
617-481-7827
PA Newtown Square
SWR Assoc
7 Reese Av
215-356-8550
WA Seattle
Datacom Assoc
1612 Eighth Ave W
206-285-2525
BELGIUM
1060 Brussels
N V Fimeca SA
Avenue Albert 125-B
ENGLAND
Richmond, Surrey
Russett Instruments Ltd
RIL House Sheen Park
ENGLAND
Herts
Lyons Instruments
Hoddesdon
FRANCE
Paris
ETS Kovacs
177 Rue de la Convention

GERMANY, WEST
Muenchen
Messgeraete Vertrieb
St Martin Strasse 30;
Kleinberghofen bei
GERMANY, WEST
D-8014 Neubiberg
Seltronics GMBH
Hermanstr 4 Bx 1236
SWEDEN
Vaellingby
M Stenhardt AB
Haesselby Torgio S-162-03
SWITZERLAND
Zurich
Tectron AG
Fufourstrasse 165 CH-8008
SWITZERLAND
Zuerich
Alpha Beta Electronics AG
Zuerich Renggerstrasse 3
Posttach 88 Ch-8060

SYSCOM INC
470B Lakeside Dr
Sunnyvale, CA 94086
408-736-7320
Contact: Dr Bala Parasuraman
■ Products & Services
Front-end processors
Message switchers
Remote network processors
Data content monitors
Network management centers
Technical control centers
Local network interfaces
Data entry terminals
Programmable terminals
Interactive terminals
Teleprinters
Teleprinters, non-impact
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Automatic calling units
Code converters
Computer/communications interfaces
Protocol converters
Selection & transfer equipment: monitor & test switching equipment
Data communications consultants
Branch Sales Offices:
TAIWAN
Taipei Taiwan
Alton Co
122 Hsin Sheng S; RD Se
3514445

SYSTAR CORPORATION
1762 Technology Drive
San Jose, CA 95110
408-280-7066
Contact: Margaret J Retz
■ Products & Services
Concentrators
Front-end processors
Message switchers
Packet processors
Applications packages
Code/protocol conversion programs
Custom programs
DDP systems software
Emulation packages
Local network software
Operating systems
Teleprocessing monitors
Word processing packages
Cables, electrical prefabricated extending
Protocol converters
Satellite delay compensation units
Data communications consultants

SYSTEM INDUSTRIES
525 Oakmead Pkwy
Sunnyvale, CA 94086
408-732-1650
Contact: D Kent Winton
■ Products & Services
Disk drives, large
Disk packs
Tape drives, magnetic
Maintenance organizations
Branch Sales Offices:
CA Los Angeles
System Industries
2049 Century Park E
213-557-0384
CA Santa Ana
System Industries
3621 MacArthur Blvd
714-754-6555
CA Sunnyvale
System Industries
525 Oakmead Pky
408-732-1650
CO Lakewood
System Industries
200 Union Blvd
303-986-1591
GA Atlanta
System Industries
340 Interstate N Pkwy
404-955-2252
IL Deerfield
System Industries
108 Wilmot Rd
312-948-9330
MD McLean
System Industries
1497 Chain Bridge Rd
703-734-9700
MA No Attleboro
System Industries
55 Plain St
617-695-4022
NJ Wayne
K&J Engineering
Box 2302
201-839-8650
NY Great Neck
Tracy-Paul Inc
50 Knightsbridge Rd
516-482-6082
NY New York
System Industries
50 Broadway
212-785-9300
OH Cincinnati
System Industries
30 Triangle Park Dr
513-771-0075
TX Houston
System Industries
11777 Katy Fwy
713-497-7224
WA Bellevue
System Industries
11058 Main St
206-451-8791

SYSTEMS ARCHITECTS INC
Thomas Patton Dr
Randolph, MA 02368
617-961-2700
Contact: Edward T Betty
■ Products & Services
Data communications consultants
Network simulation services
Timesharing/service bureaus

Branch Sales Offices:
OH Dayton
Systems Architects Inc
4032 Linden Ave
513-254-3367
VA Falls Church
Systems Architects Inc
510 W Annandale Rd
703-241-5500

SYSTEMS FURNITURE CO
2727 Maricopa St
Torrance, CA 90503
213-533-1212
Contact: Donald A Lumpkin
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
AZ Scottsdale
BFA Corporation
4426 Saddlebag Trl
602-994-5400
CA Santa Clara
Basic Systems Inc
2369 De La Cruz Blvd
408-727-1800
CA Torrance
Systems Furniture Co
2727 Maricopa St
213-533-1212
CO Castle Rock
R Squared Marketing
23 Rock Ln
CT Manchester
EMC Corporation
48 Purnell Pl
203-646-8085
HI Honolulu
Aloha Associates
1750 Kalahaua Ave
808-941-1574
IL Des Plaines
Coombs Associates
1001 East Toughy
312-298-4830
KS Lenexa
Dytec/South
8245 Neiman, #23
913-888-0215
MD Gaithersburg
The Wright Co Inc
19104 Rhodes Way
301-840-1928
MA Newton
EMC Corporation
381 Elliot St
617-244-4740
MI Farmington Hill
Carter, McCormic & Peirce Inc
23995 Freeway Park Dr
313-477-7700
MN St Paul
Dytec/North
1821 University Ave
612-645-5816
MO Maryland Hts
Dytec/South
11657 Adie Rd
314-569-2990
NJ W Hempstead
Calahan Associates
105 Stratford Rd
516-486-1305
NM Albuquerque
BFA Corporation
1704 Moon NE, #3
505-292-1271
NY W Hempstead
Calahan Associates
105 Stratford Rd
516-486-1305
OH Englewood
Carter, McCormic & Peirce Inc
15 Rockridge Rd
513-836-0951
OR Aloha
Electronic Component Sales
17475 SW Washington Ct
503-245-2342
PA Ambler
Denco Data Equipment Corp
25 Skippack Pike
215-542-9876
PA Monroeville
Carter, McCormic & Peirce Inc
409 Beatty Rd
412-372-4415
TX San Antonio
Systems Furniture Company
2038 Oak Vista
512-496-2866
UT N Salt Lake
R Squared Marketing
940 North 400E, #B
801-298-2631
WA Mercer Island
Electronic Component Sales
9311 SE 36th St
206-232-9301

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

SYSTEMS RESEARCH INC
2400 Science Parkway
Okemos, MI 48864
517-349-0200
Contact: Lawrence Meyers
■ Products & Services
Front-end processors
DDP systems
Local networks
Minicomputers
Programmable terminals
Video data terminals (KSR)
Data communications consultants
Branch Sales Offices:
MI Okemos
Systems Research Inc
2400 Science Pkwy
517-349-0200

SYSTEMS RESEARCH LABORATORIES INC
2800 Indian Ripple Rd
Dayton, OH 45440
513-426-6000
Contact: Ronald D Taulton
■ Products & Services
Remote network processors
Network management centers
Local networks
Local network interfaces
Custom programs
Data communications consultants
Network simulation services

SYSTEMS TECHNOLOGY FORUM INC
8991 Cotswold Dr
Burke, VA 22015
703-425-9441
Contact: Shirley A Petersen
■ Products & Services
Educational services

SYTEK INC
1153 Bordeaux Dr
Sunnyvale, CA 94086
408-734-9000
Contact: Dave Beckett
■ Products & Services
Packet-switching carriers
Front-end processors
Line sharing units
Multiplexers, frequency division
Packet processors
Port selectors
Port sharing units
Modems, broadband, half-group (to 19.2 kb/s)
Modems, broadband group (to 50 kb/s)
Modems, broadband, super-group (to 230.4 kb/s)
Network management centers
Technical control centers
Local networks
Local network interfaces
Code/protocol conversion programs
Local network software
Transport software
Access program
Computer/communications interfaces
Data security devices: encoder/decoders
Protocol converters
Switches, data communications: automatic
Data communications consultants
Branch Sales Offices:
MD Rockville
Sytek Inc
6000 Executive Blvd
301-984-3000

TAB PRODUCTS CO
1451 California Ave
Palo Alto, CA 94304
415-858-2500
Contact: Gary Evans
■ Products & Services
DDP systems
Microcomputer/ microprocessor systems
Disks, floppy
Batch terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Remote job entry terminals
Video data terminals (KSR)
Word processors, communicating
Furniture, cabinets, terminal enclosures
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
AZ Tempe
TAB Products Co
841 S Hohokam Dr
602-967-3371
CA El Monte
TAB Products Co
9440 Telstar Ave
213-575-3404
CA Palo Alto
TAB Products Co
1451 California Ave
415-858-2500
CA Sacramento
TAB Products Co
2110 K St
916-441-2897
CA San Diego
TAB Products Co
7585 Convoy Ct
714-292-5127
CA San Mateo
TAB Products Co
800 S Claremont
415-348-7262

FL Miami
TAB Products Co
4800 NW 167 St
305-624-1377

HI Honolulu
TAB of Hawaii
Box 10309
808-536-6727

IL Elmhurst
TAB Products Co
970 N Oaklawn Ave
312-279-0222

MD Rockville
TAB Products Co
6110 Executive Blvd
301-881-8090

MA Wellesley
Marketechs Inc
148 Linden St
617-237-4343

MI Dearborn Heights
TAB Products Co
20422 Van Born
313-278-5640

NJ Pennsauken
TAB Products Co
220 Cooper Ctr
609-663-6120

NJ West Caldwell
TAB Products Co
1140 Bloomfield Ave
201-575-7690

NY Albany
TAB Products Co
855 Central Ave
518-482-8816

NY New York
TAB Products Co
360 Lexington Ave
212-972-1420

NC Charlotte
Tab Products Co
5701 Executive Ctr Dr
704-536-8840

NC Greensboro
Tab Products Co
412 W Market St
919-370-1887

OH Dayton
TAB Products Co
6238 Executive Blvd
800-543-7872

OR Portland
TAB Products Co
1525 SE Tenth Ave
503-233-4986

TX Irving
Tab Products Co
1000 Beltline Rd
214-256-5541

UT Salt Lake City
TAB Products Co
2361 S Main
801-487-3872

WA Bellevue
TAB Products Co
11101 NE 11
206-453-8917

TANDEM COMPUTERS
19333 Vallco Pkwy
Cupertino, CA 95014
408-725-6000
Contact: Dick Luebke
■ Products & Services
Packet-switching carriers
Front-end processors
Message switchers
DDP systems
Mainframe computers
Add-on main memory
Cartridges
Cartridge drives
Disk drives, large
Tape, magnetic
Tape drives, magnetic
Interactive terminals
DDP systems software
Operating systems
Automatic answering units
Automatic calling units
Cables, electrical prefabricated extending
Educational services
Maintenance organizations

Branch Sales Offices:

AZ Phoenix
Tandem Computers Incorporated
201 North Central Ave
602-254-6728

CA Long Beach
Tandem Computers Incorporated
3711 Long Beach Blvd
213-595-7356

CA San Diego
Tandem Computers Incorporated
2667 Camino Del Rio South
714-296-0121

CA San Francisco
Tandem Computers Incorporated
4 Embarcadero Center
415-777-1230

CA Santa Clara
Tandem Computers Incorporated
3920 Freedom Circle
408-496-6690

CA Sunnyvale
Tandem Computers Incorporated
245 Santa Ana Ct
408-730-5715

CA Los Angeles
Korea Intl Product Serv Inc
C/O K T Brothers & Co;3325 Wilshire Blvd

CT Stamford
Tandem Computers Incorporated
1111 Summer St
203-324-5200

CT Englewood
Tandem Computers Incorporated
8 Inverness Court East
303-779-6766

DC Falls Church
Tandem Computers Incorporated
Three Skyline Pl;5201 Leesburg Pk
703-379-7900

FL Altamonte Springs
Tandem Computers Incorporated
701 E Altamonte Springs
305-331-8088

FL Tampa
Tandem Computers Incorporated
5509 Gray St
813-877-7466

GA Atlanta
Tandem Computers Incorporated
6400 Powers Ferry Rd
404-953-2377

IL Chicago
Tandem Computers Incorporated
Three Illinois Ctr;303 East Wacker Dr
312-856-1133

IL Schaumburg
Tandem Computers Incorporated
1827 Walden Office Sq
312-397-5200

IN Indianapolis
Tandem Computers Incorporated
9101 Wesleyan Rd
317-875-8144

KS Overland Park
Tandem Computers Incorporated
34 Corporate Woods;10950 Grandview
913-649-9002

MA Newton Center
Tandem Computers Incorporated
199 Wells Ave
617-964-6500

MI Livonia
Tandem Computers Incorporated
32480 Schoolcraft Rd
313-425-4110

MN Minneapolis
Tandem Computers Incorporated
3050 Metro Dr
612-854-5441

MO Maryland Heights
Tandem Computers Incorporated
201 Progress Pkwy
314-878-7180

NE Omaha
Tandem Computers Incorporated
5601 North 103rd St
402-493-6616

NJ Hasbrouck Heights
Tandem Computers Incorporated
777 Terrace Ave
201-288-6050

NY New York
Tandem Computers Incorporated
One Penn Plaza
212-760-8440

NY New York
Tandem Computers Incorporated
77 Water St
212-558-6655

NY Pittsford
Tandem Computers Incorporated
642 Kreag Rd
716-248-5300

NC Greensboro
Tandem Computers Incorporated
Friendship Center;5601 Roanne Way
919-294-6131

OH Cincinnati
Tandem Computers Incorporated
8035 Hosbrook Rd
513-984-2044

OH Cleveland
Tandem Computers Incorporated
6100 Rockside Woods Blvd
216-447-0880

OH Dublin
Tandem Computers Incorporated
200 West Bridge St
614-764-2400

OK Tulsa
Tandem Computers Incorporated
4135 South 100 East Ave
918-663-0940

PA Trevose
Tandem Computers Incorporated
Two Neshaminy Interplex
215-245-0600

PA Pittsburgh
Tandem Computers Incorporated
5 Gateway Ctr
412-562-0262

TN Memphis
Tandem Computers Incorporated
3035 Director's Row
901-332-3777

TX Dallas
Tandem Computers Incorporated
4101 McEwen
214-647-2326

TX Arlington
Tandem Computers Incorporated
1201 North Watson Rd
817-640-9736

TX Houston
Tandem Computers Incorporated
1445 North Loop West
713-861-6515

TX Irving
Tandem Computers Incorporated
4225 Wingren Dr
214-258-0103

UT Salt Lake City
Tandem Computers Incorporated
1174 East 2700 South
801-467-2133

VA Richmond
Tandem Computers Incorporated
6921 Ironbridge Rd
804-796-2813

WA Bellevue
Tandem Computers Incorporated
14711 NE 29th Pl
206-881-8636

WI Milwaukee
Tandem Computers Incorporated
2600 North Mayfair Rd
414-476-2025

BRITISH COLUMBIA, CANADA
Burnaby
Tandem Computers Canada Ltd
4940 Canada
604-298-6461

ONTARIO, CANADA
Markham
Tandem Computers Canada Ltd
7270 Woodbine Ave
416-490-8222

QUEBEC, CANADA
Montreal
Tandem Computers Canada Ltd
625 Ave Du President Kennedy
514-284-9253

AUSTRALIA
Victoria
Mgmt Info Systems Pty Ltd
3 Bowen Crescent;Melbourne 3004
61 (3) 267-4133

DENMARK
2630 Taastrup
Tandem Computers A/S
Helgeshoej Alle 55
45-2-5252-88

ENGLAND
Northolt Middlesex
Tandem Computers Ltd
Peel House 32-34 Church Rd
44-1-841-7381

ENGLAND
London EC2 M1NH
Tandem Computers Ltd
Bilbao House;36-38 New Broad St
628-0661

FINLAND
00101 Helsinki 10
Oy Datasaab-Valmet AB
Pl 458
90-171 441

FRANCE
94568 Rungis-Cedex
Tandem Computers S A
1 Place Des Etats Unis;SILIC 255
33-1-687-3466

GERMANY, WEST
4000 Duesseldorf 1
Tandem Computers GMBH
Geschaeftsstelle
Duesseldorf
Kirchfeldstrasse 61
49-211-313084

GERMANY, WEST
6000 Frankffurt/Main 56
Tandem Computers GMBH
Bernerstrasse 34;Postfach 560214
49-611-5007-1

GERMANY, WEST
D-2000 Hamburg 36
Tandem Computers GMBH
Geschaeftsstelle Hamburg;Grosse
Bleichen 30
040-35-17-21

GERMANY, WEST
6700 Ludwigshafen
Tandem Computers GMBH
Geschaefssteele
Mannheim/Ludwigshafen
Ludwigstrasse 67-69

GERMANY, WEST
8000 Muenchen 80
Tandem Computers GMBH
Geschaeftsstelle
Muenchen
Berg-Am-Laim-Strasse 47
089/492011-5

GERMANY, WEST
7000 Stuttgart 80
Tandem Computers GMBH
Geshaeftsstelle
Stuttgart;Eichwiesenring 14
0711/7156781-84

GREECE
Athens 403
CTI
44 Syngrove Ave
923-6616

HONG KONG
Central Hong Kong
Tandem Computers Limited
510 Wing On Centre
111 Connaught Rd
852 5-409306

ITALY
20151 Milano
Tandem Computers Italia SPA
Viale Del Ghisallo 20
39-2-3087386

JORDAN
Toshimaku Tokyo
Tandem Computers Japan, Ltd
Box 1126, Sunshine 60-19F
3-1-1 Higashi-Ikebukuro
81 3-984-6000

KUWAIT
Safat
International Turnkey Systems
Box 26729
414928

MAURITANIA
Mexico 1, DF
Tandem Computers De Mexico SA
Avenida Juarez No 14;Piso 2
905-521-2030

NETHERLANDS
2509 Ch The Hague
Tandem Computers BV
Box 95325
31-70-824131

PHILIPPINES
Ermita, Metro Manilla
Mini-Systems Inc
1431 A Mabini St

SINGAPORE
51, Mt Sinai Dr
Tandem Computers Intl Inc
Apt 704, Kuhio Rise
4690113

SWEDEN
S-171 48 Solna
Tandem Computers AB
Industrivagen 20 2TR
46-8-7305215

SWITZERLAND
CH-8036 Zurich
Tandem Computers AG
Zweierstrasse 138 Postfach
41-1-663025

TAIWAN
Taipei
Syscom Computer Engineering Co
Box 24-119;Jen Ai Road, Sec 3
(02) 7731302

VENEZUELA
Caracas
Ingedigit CA
Edif Edifica Pisos 2-3;Av
Libertador, El Rosal
323150

TANO CORP
4301 Poche Court W
New Orleans, LA 70129
504-254-3500

TAU-TRON INC
27 Industrial Ave
Chelmsford, MA 01824
617-256-9013
Contact: Herb Clark
■ Products & Services
Error rate detectors

Branch Sales Offices:

AZ Scottsdale
Dave Menegay Associates
Box 966
602-994-9519

CA La Crescenta
Beckrep Inc
5838 Irving Ave
213-957-1111

CO Boulder
Grady Moore Assoc
Box 4619
303-494-3351

FL Largo
Synergetic Representatives
13498 Ulmerton Rd
813-596-5331

GA Atlanta
Magaro & Assoc
Box 76652
404-252-6609

MD Temple Hills
Sales Technology Inc
5121 Henderson Rd
301-423-7757

MA Reading
Scheinfein Associates
174 Haven St
617-944-2304

NJ Haworth
Central Assoc
Box 10
201-568-0808

NM Albuquerque
Grady Moore Assoc
5901 Gibson Blvd SE
505-262-1416

NY Old Bethpage
Central Assoc
11 Neil Dr
516-694-3205

PA Melrose Park
Robert Meyers Assoc Inc
613 W Cheltenham Ave
215-224-1663

UT Salt Lake City
Grady Moore Assoc
1336 S 1100 E
801-359-3504

ONTARIO, CANADA
Neapean
Comtest Communications Products Ltd
80 Colonade Rd
613-226-2301

T-BAR INC
141 Danbury Rd
Wilton, CT 06897
203-834-8368
Advertising page 159
■ Products & Services
Data content monitors
Network management centers
Technical control centers
Data jacks and plugs
Selection & transfer equipment: patching equipment
Selection & transfer equipment: reconfiguration equipment
Switches, data communications: automatic
Switches, data communications: manual
Branch Sales Offices:
AZ Scottsdale
HMS Computer Resources
5834 East Justine Rd
602-953-3477
CA Walnut Creek
T-Bar Inc
1990 N California Blvd
415-943-1633
CA Redwood City
Challenge Computer Supplies Inc
727 Middlefield Rd
415-365-8105
CA Arcadia
T-Bar Inc
735 W Duarte Rd
213-574-7930
CA El Granda
DCM Associates
Box 1192
415-726-6326
CA Los Angeles
Ezra Mintz Assoc Inc
8939 Sepulveda Blvd
213-670-5410
GA Atlanta
T-Bar Inc
1005 Virginia Ave
404-768-0087
IL Hillside
T-Bar Inc
4415 W Harrison St
312-449-6006
MD Rockville
T-Bar Inc
414 N Hungerford Dr
301-251-1440
MA Randolph
T-Bar Inc
Box 641
617-961-4600
MN Minneapolis
Delta Comm Systems
8120 Penn Av S
612-884-0202
NJ Jackson
T-Bar Inc
Box 613
201-363-3300
OH Cincinnati
T-Bar Inc
4983 Delhi Pike
513-251-2800
TX Houston
T-Bar Inc
4639 Wild Indigo
713-877-8007
TX Arlington
T-Bar Inc
1201 N Watson Rd
817-640-8299
WA Bellevue
T-Bar Inc
14040 NE 8th St
206-643-7125
WA Bellevue
DPM Inc
15395 NE 8th St
206-747-3309
WV Huntington
T-Bar Inc
930 6th Ave
304-529-4141
ONTARIO, CANADA
Scarborough
R-O-R Assoc Ltd
21 Rolark Dr
416-291-7121
AUSTRALIA
N Ryde
Racal Elec Pty Ltd
47 Talavera Rd
ENGLAND
Fleet, Hampshire
Racal Milgo Ltd
Richmond CT;309 Fleet Rd
HONG KONG
Hong Kong
Cable & Wireless Sys Ltd
Connaught Rd Central, Box 4477
INDIA
New Delhi
Harvik Elect Corp
9A Connaught Pl
ISRAEL
Tel Aviv
KBL Elect
16 Mandelstam St
JAPAN
Tokyo
Rikei Corp
1-26-2 Nishi-Shinjuku
NETHERLANDS
Slough, Berks
T-Bar Inter Europe
95 High St
PHILIPPINES
Makati
Philippine Consultancy Sys
115 Esteban Street
REPUBLIC OF CHINA
Taipei, Taiwan
Howteh Enterprise Co Ltd
65 Shung Chiang Rd
SINGAPORE
Singapore
Data Dynamics Pte, Ltd
566-B Block 1;Rochor Cntr
SOUTH AFRICA
Randelburg Transvaal
Grinaker Elec Ltd
Box 50994 2125
VENEZUELA
Caracas
NCR Summa Sistemas
Apartado 1907

TECHNICAL ANALYSIS CORP
120 W Wieuca Rd NE
Atlanta, GA 30042
404-252-1045
Advertising page 38
Contact: Gerald W Buran
■ Products & Services
Multiplexers, statistical (intelligent)
Port sharing units
Computer/communications interfaces

TECHNIPOWER
A PENRIL CO, VARIAC
PO Box 222;Commerce Park
Danbury, CT 06810
203-748-7001
Contact: Gerald Voity
■ Products & Services
Power Distribution-Regulation
Power supplies
Branch Sales Offices:
AZ Glendale
Adtek Inc
5322 No 59th Ave
602-846-4650
CA Santa Clara
M S Instruments Inc
3080 Olcott St
408-727-2525
CA Van Nuys
Mike Roth Sales Inc
16117 Wyandotte St
800-272-3919
CA Sunnyvale
Westates Electronics Corp
549 Weddell Dr
415-964-1700
CA Los Angeles
Cal-State Electronics Corp
5222 Venice Blvd
213-933-8187
CA Canoga Park
R A G Enterprizes Inc
21418 Parthenia St
213-998-6500
CT Old Saybrook
M L Associates
5 Ruth Dr
203-388-9718
FL Pompano Beach
Electro Mechanical Standards Inc
2501 NW 17th Ln
305-973-3822
IL La Grange
PVA Company Inc
5650 S Brainard Ave
312-579-9300
IL Chicago
Delta Technical Products
3714 W Belmont Ave
312-478-1134
MA Marlboro
M L Associates
96 Helen Dr
617-485-6190
MA N Woburn
Abbott Electronics Co
175 New Boston Park
617-935-2040
MI Pleasant Ridge
Shalco Inc
23716 Woodward Ave
313-547-4771
MI Dearborn
Industrial Temperature Control
23419 Ford Rd
313-278-2210
MN Minneapolis
The Mark Company
3832 Zenith Ave
612-920-1009
MN St Paul
Gopher Electronics Co
222 E Little Canada Rd
612-483-3322
MO Maryland Heights
Ensco-Rep Inc
#7 Mill Park Dr
314-423-3935

NY Liverpool
R & D Associates Inc
123 Sun Harbor Dr
315-457-0100

NY Rockville Centre
Midway Industrial Electronics
24 Maple Ave
516-674-2400

OH Dayton
Esco Inc
221 Crane St
513-226-1133

PA Philadelphia
Philadelphia Electronics
112 N 12th St
609-365-6704

ONTARIO, CANADA
Guelph
Victrix Limited
Box 1807
519-836-1480

TECHNIPOWER
A PENRIL CO, POWER SUPPLIES
PO Box 222, Commerce Park
Danbury, CT 06810
203-748-7001
Contact: Larry Carbone
■ Products & Services
Power Distribution-Regulation
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:

AZ Glendale
Adtek Inc
5322 N 59 Ave
602-846-4650

CA Los Angeles
Cain Technology
522 S Sepulveda Blvd
213-476-2251

CO Denver
Cleveland Enterprises of Colorado Inc
1602 S Parker Rd
303-751-3252

CT Hamden
JBL Assoc
74 Terrace Ave
203-28-3161

FL Pompano Beach
Electro Mechanical Standards Inc
2501 NW 17th Ln
305-973-3822

IL La Grange
PVA Company Inc
521 S La Grange Rd
312-579-9300

MA Woburn
Component Technology
175 New Boston Pk
617-933-5390

MI Birmingham
Favco Inc
16291 W Fourteen Mile Rd
313-644-0173

MN Minneapolis
The Mark Co
3832 Zenith Ave
612-920-1009

MO Maryland Heights
Ensco-Rep Inc
#7 Mill Park Dr
314-423-3935

NY Liverpool
R & D Assoc
123 Sun Harbor Dr
315-457-0100

NY Commack
Haner Associates
66 Commack Rd
516-462-5185

OH Cleveland
Components Inc
10600 Sprague Rd
216-243-9200

TX Richardson
Scientific Sales Co
777 S Central Expwy
214-231-6541

VA Arlington
H J Heffernan
1123 N Irving St
703-522-6666

ONTARIO, CANADA
Guelph
Victrix Ltd
Box 1807
519-836-1480

ISRAEL
Ramat Hasharon
RDT Electronic Engr Ltd
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SWITZERLAND
Montreux
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21-623651

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741 10th St
Santa Monica, CA 90402
213-394-8305
Contact: Hal Levin
■ Products & Services
Data communications consultants
Educational services

TECHTRAN INDUSTRIES
200 Commerce Dr
Rochester, NY 14623
716-334-9640
Contact: Roland Boisvert
■ Products & Services
Microcomputer/ microprocessor systems
Add-on auxilliary memory
Cassette drives
Disk drives, floppy
Batch terminals
Programmable terminals
Portable data entry terminals
Remote job entry terminals
Branch Sales Offices:

CA Irvine
Thorson Co
18009 Skypark Circle
714-557-4460

CA San Diego
Mesa Engrg
7525 Convey Ct
714-278-8021

CA Mt View
Thorson West
625 Ellis St
415-964-9300

MD Gaithersburg
Technical Sales Assoc
19544 Clubhouse Rd
301-258-9790

MA Chelmsford
Tekdata
6 Kidder Rd
203-693-0719

MN Minneapolis
Bexdata
7701 Normandale Blvd
612-835-5220

MO Grandview
Digital Systems Sales
4006 E 137 Tr
816-765-3337

NJ Perth Amboy
Marlin Data
774 Pfeiffer Blvd
201-442-3400

NY Birmingham
Tae-Rep
209 Court St
607-772-6952

OH Centerville
Micro Sls Corp
34 Virginia Av
513-433-8171

PA Jenkintown
Stein Instr
413 Johnson St
215-885-2370

TX Dallas
Data Marketing Assoc
14235 Proton Rd
214-661-0300

WA Seattle
SJI Corp
5950 6th Ave
206-763-8981

TEC INC
2727 N Fairview Ave Box 5646
Tucson, AZ 85703
602-792-2230
Contact: Lloyd Schiller
■ Products & Services
Badge readers
Batch terminals
Data entry terminals
Graphic display terminals
Interactive terminals
Remote job entry terminals
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:

CA Huntington Beach
TEC Inc
17610 Beach Blvd
714-848-3111

CA San Mateo
TEC Inc
16705 S Amphlett Blvd
415-572-1566

IL Oak Brook
TEC Inc
2625 Butterfield Rd
312-655-1060

MA Framingham
TEC Inc
One Framingham Centre
617-879-6886

MN Edina
Grayden & Flemmer Inc
7009 Washington Ave
612-941-1120

NJ Freehold
TEC Inc
Southgate Office Center
201-780-6700

TX Arlington
TEC Inc
611 Ryan Plaza Dr
817-274-9827

TEK-COM
2142 Paragon Dr
San Jose, CA 95131
408-263-7400
Contact: Ronald L Barrett Sr
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Modems, limited distance
Modems, multipoint
Modems, multiport
Add-on auxilliary memory
Automatic calling units
Cables, electrical prefabricated extending
Computer/communications interfaces
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Switches, data communications: manual

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Santa Monica, CA 90403
213-829-7305
Contact: R Hess
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RTS emulator
Applications packages
Custom programs
Local network software
Transport software
Access program
Operating systems
Teleprocessing monitors
Computer/communications interfaces
Data communications consultants
Branch Sales Offices:
CT Newtown
Tekelec Inc
Whippoorwill Hill Rd
203-426-1465

TEKTRONIX INC
Box 1700
Beaverton, OR 97075
503-644-0161
Contact: Jim Griffin
■ Products & Services
Data content monitors
EIA cable testers
Electrical-parameters test equipment
Functional Parameters Test Equipment
Microcomputer/ microprocessor systems
Tape, magnetic
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Terminal controllers
Video data terminals (KSR)
Branch Sales Offices:
AL Huntsville
Tektronix Inc
3322 S Memorial Pkwy
205-881-2912
AZ Phoenix
Tektronix Inc
4130 E Wood St
602-268-8861
CA Pleasant Hill
Tektronix Inc
3451 Vincent Rd
415-932-4949
CA Irvine
Tektronix Inc
17052 Jamboree Blvd
714-556-8080
CA Woodland Hills
Tektronix Inc
21300 Erwin St
213-999-1711
CA San Diego
Tektronix Inc
7827 Convoy Ct
714-292-7330
CA Santa Clara
Tektronix Inc
3003 Bunker Hill Ln
408-496-0800
CO Englewood
Tektronix Inc
14 Inverness Dr E
303-773-1011
CT Milford
Tektronix Inc
40 Commerce Park Rd
203-877-1494
FL Fort Lauderdale
Tektronix Inc
2745 NW 62nd St
305-973-9300
FL Orlando
Tektronix Inc
3657 Maguire Blvd
305-894-3911
FL Pensacola
Tektronix Inc
6425 N Pensacola Blvd
904-476-1897
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404-449-4770
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2979 Ualena St
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IL Rolling Meadows
Tektronix Inc
5350 Keystone Ct
312-259-7580
IN Indianapolis
Tektronix Inc
6121 E 30 St
317-545-2351
KS Overland Park
Tektronix Inc
10580 Barkley
913-341-3344
LA Kenner
Tektronix Inc
1940 1-10 Service Rd Concorse Place
504-466-4445
MD Lutherville
Tektronix Inc
1526 York Rd
301-321-7000
MD Rockville
Tektronix Inc
2 Research Ct
301-948-7151
MA Lexington
Tektronix Inc
482 Bedford St
617-861-6800
MI Farmington
Tektronix Inc
24155 Drake Rd
313-478-5200
MN St Paul
Tektronix Inc
4660 Churchill Rd
612-484-8571
MO Hazelwood
Tektronix Inc
422 Anglum Rd
314-731-4696
NJ Woodbridge
Tektronix Inc
40 Gill Ln
201-636-8616
NM Albuquerque
Tektronix Inc
1258 Ortiz Dr SE
505-265-5541
NY Albany
Tektronix Inc
16 Computer Dr W
518-458-7291
NY Woodbury
Tektronix Inc
100 Crossways Park W
516-364-9060
NY Poughkeepsie
Tektronix Inc
38 Haight Ave
914-454-7540
NY Rochester
Tektronix Inc
1210 Jefferson Rd
716-244-2600
NY North Syracuse
Tektronix Inc
1 Northern Concourse
315-455-6661
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Tektronix Inc
3725 National Dr
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Tektronix Inc
7830 Freeway Circle
216-243-8500
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501 Progress Rd
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OK Oklahoma City
Tektronix Inc
800 NE 63
405-848-3361
OR Tigard
Tektronix Inc
7000 SW Hampton St
503-620-9100
PA Blue Bell
Tektronix Inc
1720 Walton Rd
215-825-6400
PA Pittsburgh
Tektronix Inc
1051 Brinton Rd
412-244-9800
TN Knoxville
Tektronix Inc
9041 Executive Park Dr
615-690-6422
TX Dallas
Tektronix Inc
Box 344529
214-233-7791
TX Houston
Tektronix Inc
10887 S Wilcrest Dr
713-933-3000
TX San Antonio
Tektronix Inc
3311 Roselawn
512-434-4334
UT Salt Lake City
Tektronix Inc
300 Mercer Way
801-486-1091
VA Newport News
Tektronix Inc
606 Denbigh Blvd
804-874-0099
WA Kent
Tektronix Inc
19026 72 Ave S
206-575-0180

ALBERTA, CANADA
Calgary
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3011 19th St NE
403-230-1836

ALBERTA, CANADA
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6025-103A St
403-434-9466

BRITISH COLUMBIA, CANADA
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Tektronix Canada Inc
4519 Canada Way
604-438-4321

MANITOBA, CANADA
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Tektronix Canada Inc
1313 Border St
204-632-4447

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Barrie
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Box 6500
705-737-2700

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Tektronix Canada Inc
1792 Courtwood Crescent
613-225-2850

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Tektronix Canada Inc
900 Selkirk St
514-697-5340

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Tektronix Canada Inc
10 Akerley Blvd
902-469-9476

ALGERIA
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Tektronix Ltd
Box 36
61.50.24

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Guermsey Channel Islands
Tektronix Limited
Box 36
Guernsey 35781

ANGOLA
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Tecnidata Representacoes Tecnicas e Electronica Aplicada Lda
Caixa Postal 1619
32025

ARGENTINA
Buenos Aires
Coasin SA
Virrey del Pino 4071
52-3185

AUSTRALIA
Sydney
Tektronix Australia Pty Ltd
80 Waterloo Rd;North Ryde NS W 2113
888-7066

AUSTRIA
Vienna
Rohde & Schwarz-Tektronix Ges mbH
Sonnleithnergasse 20
62 61 41

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Vienna
Rohde & Schwarz Tektronix Ges mbH
Sonnleithnergasse 20 A-1100
62 61 41

BELGIUM
1130 Bruxelles
Tektronix vn/sa
Rue De La Fusee NR 100
02/720.80.20

BOLIVIA
La Paz
Coasin Bolivia SRI
Avenida 6 de Agosto 2300
40962

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Tektronix Industria e Comercio Ltda
Rua Franz Schubert 59
813-3011

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Equipos Industriates SACI
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716-882

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632874

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Herlev Hovedgade 119
02 84 56 22

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Ave 6 de Deciembre 865 y Roca
52-6759

EGYPT (UAR)
Cairo
Giza Systems Engineering Co
4 El-Hesn St
841200

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Electronica Cuscatleca SA de CV
21 Av Nte y Calle Arce 1268
22-0297

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Tektronix UK Ltd
36-38 Coldharbour Ln
63141

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Helsinki 65
Tektronix O/Y
Larin Kyostin tie 4
90-722 400

FRANCE
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Z I Courtaboeuf B P 13
907 78 27

GERMANY, WEST
1000 Berlin-West 10
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030 3 41 40 36

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Box 906
24120

INDIA
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69-A L lagmohandas Marg
81 13 16/81 53 44

INDONESIA
Jakarta
P T Dwi Tunggal Jaya Sakti
Box 4435
367390-9

IRAN
Tehran
Irantronics Company Ltd
20 Salm Rd
828294

IRAQ
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Al Manar Engineering WLL
Jumhuria St
60992

ISRAEL
Tel Aviv
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11 Rozanis St
475151

ITALY
20141 Milano
Tektronix SPA
Via Lampedusa 13
8466440

IVORY COAST
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SITEL
Blvd Giscard D'Estaing-Carrefour
353600

JAPAN
Tokyo
Sony/Tektronix Corp
9-31 Kitashinagawa-5
448-4851

JORDAN
Amman
TAREQ Scientific Bureau
Box 35055
42333

KENYA
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Box 46658
26815

KOREA REP (REP)
Seoul
M-C International Ltd
22-2 Hakdong Kangnam-Ku
56 6131

KUWAIT
TAREQ Co
Box Safat 20506
436100

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Box 11-5281
331680

MALAYSIA FED OF
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773455

MEXICO
Mexico
Tektronix SA de CV
Colonia Napoles
905-687-1021

MOROCCO
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SCRM
75 Ave Fal Ould Oumeir
07-749-47

NETHERLANDS
Badhoevedorp
Tektronix Holland NV
Meidoornweg 2
02968-1456

NEW ZEALAND
Auckland
W & K McLean Ltd
103-105 Felton Mathew Ave
587-037

NORWAY
Oslo
Tektronix Norge A/S
Lorenfaret 1
02-212855

PAKISTAN
Karachi-29
Pak-Land Corp
Iqbal Rd
437315

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Panama 5
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Apartado 4929
64-9354

PERU
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Importaciones y Representaciones Electronicas SA
Avda FD Roosevelt 105
28-86-50

PHILIPPINES
Makati Rizal 3117
Philippine Electronic Industries Inc
8755 Paseo de Roxas
87-99-26

PORTUGAL
Lisbon
Decada Equipamentos de Electronica Lda
Box 1128
574984

SAUDI ARABIA
Riyadh
Electronic Equipment Mktg Ltd
Box 3750
32700/37023

SINGAPORE
Singapore 3
Mechanical & Combustion Eng Co Ptd Ltd
10-12 Jalan Kilang
647151

SOUTH AFRICA
Transvaal
Protea Physical & Nuclear Instrumentation (Pty Ltd)
746 Sixth St
27 11 786-3647

SPAIN
Madrid 27
Tektronix Espanola SA
c/Condesa de Venadito
91 4041011

SUDAN
Khartoum
Cine & Photo Supply Co
Box 393
75162

SURINAM
Paramaribo
Wong Sang Tsoi & Co
20-24 Dominestraat
73511

SWEDEN
S-171 04 Solna
Tektronix AB
Fack
08/83 00 80

SWITZERLAND
CH-6301 Zug
Tektronix International AG
Box 57
042 21 91.92

SYRIA
Damascus
General Trading Co
Box 798
114807

TAIWAN
Taipei 104 ROC
Heighten Trading Co Ltd
16 Nanking E Rd
551-916

THAILAND
Bangkok
G Simon Radio Co Ltd
30 Patpong Ave
30991-3

TUNISIA
Tunisie
Societe El Eslek
3 Rue de la Monnaie
244372

TURKEY
Istanbul
Erkman Elektronik Aletler
Necatibey Caddesi 92/3
44 15 46/44 76 51

URUGUAY
Montevideo
Coasin Uruguaya SRL
Casilla de Correo #1400
91-79-78

VENEZUELA
Caracas
Equilab CA
Avda Romulo Gallegos
283-1166

ZAMBIA
Lusaka
Baird and Tatlock Ltd
Chandwe Musonda Rd
75315/6

TELAUTOGRAPH CORPORATION
8700 Bellanca Ave
Los Angeles, CA 90045
213-641-3690
Contact: Frank May
■ Products & Services
Facsimile terminals
Telescriber
Paper for terminals
Branch Sales Offices:

CA Los Angeles
Telautograph Corp
8700 Bellanca Ave
213-776-0765

CA San Francisco
Telautograph Corp
1485 Bayshore
415-467-3212

CO Aurora
Telautograph Corp
15290 E 6th Ave
303-364-4156

DC Baileys Cross Roads
Telautograph Corp
5850 Leesburg Pike
703-820-3573

FL North Miami
Telautograph Corp
1626 NE 148 St
305-940-0423

GA Atlanta
Telautograph Corp
6855 Jimmy Carter Blvd
404-447-8440

HI Honolulu
Telautograph Corp
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808-841-5031

IL Chicago
Telautograph Corp
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312-622-7111

IN Indianapolis
Telautograph Corp
6226 N Collage Ave
317-647-9005

LA New Orleans
Telautograph Corp
3003 Lime
504-282-4635

MA Boston
Telautograph Corp
950 Boylston Ave
617-244-4006

MI Royal Oak
Telautograph Corp
4610 Delemere
313-549-0600

MI Detroit
Telautograph Corp
4610 Delemere
313-549-0600

MN St Paul
Telautograph Corp
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612-644-1198

MO St Louis
Telautograph Corp
8147 Delmar Blvd
314-385-1153

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Telautograph Corp
57 Lakeview Av
201-772-2740

OH Cincinnati
Telautograph Corp
1433 E McMillan
513-861-2214

OH Cleveland
Telautograph Corp
19701 S Miles Ave
216-267-4557

PA Pittsburgh
Telautograph Corp
200 Dinsmore Ave
412-922-5118

TN Nashville
Telautograph Corp
107 Music City Circle
615-256-0734

TX Houston
Telautograph Corp
2500-C Central Pkwy
713-688-9505

TX Dallas
Telautograph Corp
2339 Inwood Rd
214-357-0785

TELCON INDUSTRIES
1401 NW 69th St
Fort Lauderdale, FL 33309
305-971-2250
Contact: Jeff Samuels
■ Products & Services
Data entry terminals
Portable data entry terminals
Remote job entry terminals

Branch Sales Offices:
CA Pomona
Arrow Electronics
1802 W 2nd St
714-622-1271
CA San Diego
Arrow Electronics
9511 Ridgehaven Ct
714-692-7461
CA Sunnyvale
Arrow Electronics
521 Weddell Dr
408-745-6600
CA Burbank
United States Instrument Rentals
4525 Valerio St
213-849-5861
CA San Mateo
United States Instrument Rentals
700 S Claremont St
415-579-0911
CA San Mateo
United States Instrument Rentals
2988 Campus Dr
800-227-6884
CO Denver
Arrow Electronics
2121 S Hudson St
303-758-2100
CO Denver
Arrow Electronics
5465 E Evans Pl
303-758-4585
CO Englewood
United States Instrument Rentals
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203-265-7741
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600 Steamboat Rd
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305-776-7790
FL Palm Bay
Arrow Electronics
50 Woodlake Dr W Bldg B
305-725-1480
FL Orlando
United States Instrument Rentals
6990 Lake Ellenor Dr 100
305-855-4900
GA Norcross
Arrow Electronics
2979 Pacific Dr
404-449-8252
IL Schaumburg
Arrow Electronics
492 Lunt Ave
312-893-9420
IL Arlington Heights
United States Instrument Rentals
511 W Golf Rd
312-981-1600
IN Indianapolis
Arrow Electronics
2718 Rand Rd
317-243-9353
MD Baltimore
Arrow Electronics
4801 Benson Ave
301-247-5200
MD Rockville
United States Instrument Rentals
1383 Piccard Dr
301-258-9888
MA Woburn
Arrow Electronics
Arrow Drive
617-933-8130
MI Ann Arbor
Arrow Electronics
3810 Varsity Dr
313-971-8220
MN Edina
Arrow Electronics
5230 73rd St
612-830-1800
MO St Louis
Arrow Electronics
2380 Schuetz Rd
314-567-6888
NH Manchester
Arrow Electronics
1 Perimeter Rd
603-668-6968
NJ Morrestown
Arrow Electronics
Pleasant Valley Ave
609-235-1900
NJ Saddle Brook
Arrow Electronics
285 Midland Ave
201-797-5800
NJ Edison
United States Instrument Rentals
1 Metro Plaza
201-494-1500
NM Albuquerque
Arrow Electronics
2460 Alamo Ave SE
505-243-4566
NY Hauppauge
Arrow Electronics
129 Oser Ave
516-231-1030
NY Farmingdale
Arrow Electronics
155 Sherwood Ave
516-293-6363
NY Farmingdale
Arrow Electronics
900 Broadhollow Rd
516-694-6800
NY Hauppauge
Arrow Electronics
20 Oser Ave
516-231-1000
NY Rochester
Arrow Electronics
3000 S Winton Rd
716-275-0300
NY Liverpool
Arrow Electronics
7705 Maltlage Dr
315-652-1000
NY Ronkonkoma
Arrow Electronics
1860 Smithtown Ave
516-694-6800
NC Raleigh
Arrow Electronics
3117 Poplarwood Ct 123
919-876-3132
NC Winston Salem
Arrow Electronics
938 Burke St
919-721-1661
OH Solon
Arrow Electronics
6238 Cochran Rd
216-248-3990
OH Centerville
Arrow Electronics
7620 Mcewen Rd
513-435-5563
PA Monroeville
Arrow Electronics
650 Seco Rd
412-856-7000
TX Dallas
Arrow Electronics
13715 Gamma Rd
214-386-7500
TX Stafford
Arrow Electronics
10700 Corporate Dr 100
713-491-4100
TX Richardson
United States Instrument Rentals
1744 N Greenville Ave
214-234-3392
WA Bellevue
Arrow Electronics
14320 NE 21 St
206-643-4800
WI Oak Creek
Arrow Electronics
430 W Rawson Ave
414-764-6600
ONTARIO, CANADA
Rexdale Ontario
United States Instrument Rentals
44 Faskin Dr
416-675-5596

TELDATA SYSTEMS CORP
90 Board St
NY, NY 10004
212-248-9200
Contact: Henry Forbes
■ Products & Services
Microcomputer/ microprocessor systems
Minicomputers
Add-on main memory
Add-on auxilliary memory
Interactive terminals
Remote line printers
Operating systems
Word processing packages
Branch Sales Offices:
CA Marina Del Rey
Max Com
4119 Via Marina
213-821-1625
NY Mahwan
Syscom Inc
45 Walnut St
201-891-9552
OH Woodmere
Communication Tech
3439 W Brainard
216-464-4818
WI Waukesha
Prairie Assoc
Box 982
414-544-1141

TELECOM LIBRARY INC
205 W 19th St
NY, NY 10011
212-691-8215
Contact: Harry Newton
■ Products & Services
Applications packages
Personal computer communications software
Teleprocessing monitors
Word processing packages
Educational services

TELECOMMUNICATIONS TECHNIQUES CORP
7 Dalamar Street
Gaithersburg, MD 20877
301-258-5011
Contact: R Story

■ Products & Services
Digitized-voice processors
Line drivers
MIL 188C adapters
Data content monitors
Error rate detectors
Technical control centers
Computer/communications interfaces
Data jacks and plugs
Pulse and signal regenerators
Satellite delay compensation units
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Switches, data communications: automatic
Switches, data communications: manual
Voice digitizers
Branch Sales Offices:
AZ Scottsdale
Barnhill Associates Inc
7319 E Stetson Dr
CA Englewood
Barnhill Two & Three Inc
7076 S Alton Way
303-779-3600
CA Mountain View
CSS Telecommunications I
2680 Bayshore Frontage Rd
CA Los Alamitos
CSS Telecommunications II
10915 Bloomfield St
CO Englewood
Barnhill Associates Inc
7076 S Alton Way
CT Fairfield
Higgins Ind Inc
33 Old Academy Rd
203-259-2113
CT Fairfield
Higgins Ind Inc
33 Old Academy Rd
LA Baton Rouge
Barnhill Associates Inc
440 N Foster
MA Waltham
CSI Systems Inc
60 Hickory Dr
NH Concord
Concord Communications Inc
5 South State
603-224-8602
NM Albuquerque
Barnhill Associates Inc
1410 D Wyoming NE
TX Richardson
Barnhill Associates Inc
1101 Executive Dr E
TX Houston
Barnhill Associates Inc
10606 Hempstead Hwy
TX Austin
Barnhill Associates Inc
111 W Anderson Ln
UT Murray
Barnhill Associates Inc
5180 S 300 West
VA McLean
Creative Marketing Associates Ltd
6716 Old McLean Village Dr
WA Redmond
CSS Telecommunications II
14828 North East 31st Circle
ONTARIO, CANADA
Downsview
Teleradio Systems Ltd
301 Supertest Rd
416-661-3221
ONTARIO, CANADA
Downsview
Teleradio Systems Ltd
301 Supertest Rd
AUSTRALIA
McLeod
JJT Systems
Whalers Cove Marina
ENGLAND
Croydon
Codex UK Ltd
105/107 Lansdown Rd
FRANCE
75012 Paris
Walton SA
122 Rue Nollet
JAPAN
Shinagawa ku
Nihon Dynatech K K
25-5, Nishi-Gotanda 7-chome
NETHERLANDS
The Hague
Koning en Hartman
30 Koperwerf
PAKISTAN
Islamabad
United International Technologies
Box 1149
SWITZERLAND
Geneva
Interep
4, cours des Bastions

TELECOMMUNICATIONS TECHNOLOGY, INC
A UNIT OF GENERAL SIGNAL CORP
555 Del Rey Ave
Sunnyvale, CA 94086
408-735-8080
Contact: Barry Pfeil
■ Products & Services
Electrical-parameters test equipment
Network management centers
Selection & transfer equipment: monitor & test switching equipment
Branch Sales Offices:
CA Sunnyvale
Telecommunications Tech
555 Del Rey Ave
408-735-8080
CA Santa Fe Springs
Kennedy Eng Co
Box 2667
213-868-9965
CO Denver
Lindberg Co
6140 E Evans Ave
303-758-9033
DC Washington
Powell-Pendergraph
7979 Old Georgetown Rd
301-656-4535
GA Marietta
Telecommunications Tech
2967 Christopher Ct
404-973-4794
IL Schaumburg
Kenneth W Meyers Co
1242 Remington Rd
312-882-4808
WA Bellevue
Arva Hudson
Box 1512
206-455-0773
ONTARIO, CANADA
Scarborough
ROR Assoc Ltd
21 Rolark Dr
416-291-7121
ONTARIO, CANADA
Mississauga
Telecommunications Tech
1655 Sismet Rd
416-625-4406

TELECOM SYSTEMS GROUP
579 Pompton Ave
Cedar Grove, NJ 07009
201-239-5700
Contact: Leonard Elfenbein
■ Products & Services
Network management centers
Technical control centers
Microcomputer/ microprocessor systems
Minicomputers
Educational services
Maintenance organizations
Network simulation services
Branch Sales Offices:
ENGLAND
London
Telecom Systems Ltd
88 Old St
441-251-4171
FRANCE
Paris 75001
Telecom Systems Group S A
6 Rue St Florentin
331-296-4634
HONG KONG
Hong Kong
Telecom Systems Group Inc
Connought Center
5-253524

TELE-DATA INC
8798 NW 15th St
Miami, FL 33172
305-591-8800
■ Products & Services
Acoustic couplers
Batch terminals
Programmable terminals
Remote line printers
Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Lease and resale organizations

TELEDYNE INET
2750 West Lomita Blvd
Torrance, CA 90509
213-325-5040
Contact: James Weatherman
■ Products & Services
Power Distribution-Regulation
Power supplies
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
NY NYC
Teledyne Inet
919 Third Ave
212-751-7455
TX Richardson
Teledyne Inet
634 Tiffany Trail
214-690-5842
VA Arlington
Teledyne Inet
1501 Wilson Blvd #900
703-522-2557
BELGIUM
Brussels
Teledyne Inet
181 Chaussee de la Hulpe
02-673-9988

SAUDI ARABIA
Jeddah
Teledyne Inet
Box 6891
667-1041

TELEMATION MANAGEMENT GROUP INC
120 Tremont St
Boston, MA 02108
617-451-3225
Contact: Nelson Hanover
■ Products & Services
Data communications consultants

Stay up-to-date with new catalog information and new product announcements.
Turn to **UpDate Service Card, page 201.**

TELENOKIA OY
PO Box 33
Espoo 60, 02601
Finland
0-56591
■ Products & Services
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modems, broadband, half-group (to 19.2 kb/s)
Network management centers
Automatic answering units
Cables, electrical prefabricated extending
Branch Sales Offices:
FL Largo
Kinex Corp
6793 Cross Bayou Dr
813-541-6404

TELEPHONE MGMT SYSTEMS
180 Bear Hill Rd
Waltham, MA 02154
617-890-6565
Contact: Mikelle Kennedy
■ Products & Services
Timesharing/service bureaus

TELEPROCESSING PRODUCTS INC
4565 E Industrial St;Bldg #7-K
Simi Valley, CA 93063
805-522-8149
Contact: Richard Lach
■ Products & Services
Modem sharing units
Port selectors
Port sharing units
Line drivers
Parallel line extenders
Protocol analyzers
Response-time monitors
RTS emulator
Teleprocessing monitors
Code converters
Protocol converters
Selection & transfer equipment: reconfiguration equipment
Data communications consultants
Network simulation services
Branch Sales Offices:
CA Lafayette
Persons & Assoc
3717 Mt Diablo Blvd
415-284-2912
CA Los Angeles
Hanex Inc
10203 Santa Monica Blvd
213-556-3807
CO Littleton
Cropley Inc
2275 E Arapahoe Rd
303-794-4231
IL Chicago
HH Sales
2007 N Sedgwick
312-871-8250
IN Indianapolis
HH Sales
3232 Blue Bell Ln
317-297-1876
MD Ashton
Blackwood Associates Inc
17904 Ednors View Ter
301-924-2858
MA Danvers
John Melanson & Assoc
39 Pine St
617-774-1220
MI Farmington Hills
Data Specifications Corp
31700 W 12 Mi Rd
313-553-9111
MN Minneapolis
Delta Communications
8120 Penn Ave So
612-884-0202
NJ Bellmawr
Applied Delta Sys
101 Kor Center E
609-931-3100
NY Ilion
Annese & Assoc
60 Pine St
315-895-7469
NY Great Neck
Harvey Krasner Assoc
87 Water Mill Ln
516-487-0690
NY Rochester
Annese & Assoc Inc
167 Flanders St
716-436-3758
OH Columbus
Data Specifications Corp
6230 Busch Blvd
614-885-6682
OH Cleveland
Data Specifications Corp
19120 Detroit Rd
216-333-6740
PA Pittsburgh
Applied Delta Sys
16 EW Dr
412-931-1960
TX Dallas
Computer Assoc
212 Empire Cntr
206-763-8981
WA Seattle
SJI Corp
5950 6th Ave So Ste 101
206-624-9020
WI Brookfield
Delta Comms Inc
14640 W Greenfield Av
414-784-3663

ONTARIO, CANADA
Weston
Electronetic Systems
785 Arrow Rd
416-745-2999

TELERAY DIV RESEARCH INC
PO Box 24064
Minneapolis, MN 55424
612-941-3300
Contact: Travis D Henry
■ Products & Services
Port sharing units
Disk drives, floppy
Programmable terminals
Interactive terminals
Video data terminals (RO)
Maintenance organizations
Branch Sales Offices:
AL Huntsville
Highsmith Co
2809 Triana Blvd
205-536-6666
AZ Tempe
J F Hurlbut Co
1000 E Apache Blvd
602-968-5962
CA Long Beach
Edwards Assoc
Box 4591
213-597-1231
CA Torrance
Edwards Assoc
2808 Oregon Ct
213-328-9770
CA Irvine
Edwards Assoc
Box 4306
714-552-7850
CA San Diego
Edwards Assoc
1735 Archer
714-273-4771
CA Sunnyvale
Inter-Link Systems
580 Weddell Dr
408-744-1930
CA Thousand Oaks
Edwards Assoc
887 Tupelo Wood Court
805-498-5413
CA Novato
edward T Driscoll
180 Montura Way
415-883-0353
CO Golden
J F Hurlbut Co
622 Gardenia Ct
303-279-7796
CT Milford
S & S Electronics
401 Boston Post Rd
203-878-6809
FL Orlando
Highsmith Co
2545 Industrial Pk
305-293-5202
FL Boca Raton
Highsmith Co
4190 NW Oak Circle
305-368-9194
GA Atlanta
Equipment Resources
120 Interstate North
404-952-5757
HI Honolulu
Western Union of Hawaii
190 S King St
808-523-1326

IL Oak Brook
Systems Consulting
1200 Harger Rd
312-655-0040

IL Des Plaines
CW Electronics
1001 E Touhy
312-298-4830

IN Carmel
Startronic
1717 E 116th St
317-844-0102

MD Silver Spring
Product Management
1110 Fidler La
301-589-2802

MA Lowell
S & S Electronics
80 Stedman St
617-459-2578

MI Elmhurst
Kalbro/ICE
772 N Church Rd
312-279-1960

MI Farmington
Star-Tronic
23995 Freeway Park Dr
313-477-7586

MN Brooklyn Park
Tele-Terminals
7216 Boone Ave N
612-535-5330

MO St Louis
Precision Data Products
358 Brookes Dr
314-731-2310

NJ Ridgewood
Hansen & Hughes
Box 806
201-652-7055

NJ Union
Transnet
1945 Route 22
201-688-7800

NJ Bellmawr
Transnet
18 Heller Pl
609-931-0884

NY Penfield
Western NY Computing
Box 56
716-381-4120

NY Colonie
Western New York Computing
22 Tattersall Lane
518-869-2077

NY New York
Technitron Int'l Inc
745 Fifth Ave
212-758-2790

NC Charlotte
Highsmith Co
1141 Hawthorne Ln
704-333-7743

OH Wickliffe
Data Tron
29150 Anderson Rd
216-585-8421

OH Dayton
Data Tron
Box 24207
513-223-8421

OH Englewood
Startronic
15 Rockridge Rd
513-826-3535

OH Fairview Park
Startronic
22650 Lorain Rd
216-779-9660

PA Monroeville
Data Tron
Box 67
412-243-8421

PA Ambler
Denco Data Equipment
25 Skippack Pike
215-542-9876

PA Monroeville
Startronic
409 Beatty Rd
412-372-3340

TX Richardson
Datanet
214-669-1758

UT Salt Lake City
J F Hurlbut Co
3616 West 2100 South
801-793-4443

VT S Burlington
S & S Electronics
26 Mary St
802-658-0000

VA Fairfax
Nine Associates
10680 Main St
703-273-1803

VA Richmond
Highsmith Co
8728 Forest Hill Ave
804-272-5888

WA Redmond
Desco NW
16126 NE 87th St
206-883-6336

WI Madison
Western New York Computing
16 Brookview Terrace
203-245-3208

BRITISH COLUMBIA, CANADA
Vancouver
R O R Associates Ltd
2415 Columbia St
604-876-4311

ONTARIO, CANADA
Scarborough
R O R Associates Ltd
21 Rolark Dr
416-291-7121

ONTARIO, CANADA
Ottawa
R O R Associates Ltd
7 Slack Rd
613-225-7646

QUEBEC, CANADA
Montreal
R O R Associates Ltd
3300 Cavendish Blvd
514-482-8430

ARGENTINA
Buenos Aries
ARO-SAIC
Casilla de Correo 5681
308278/341-1586/0699/6636

AUSTRALIA
Clayton Victoria
Anderson Digital Equipment Pty
Box 422
5443444

BRAZIL
Sao Paulo
AROTEC S.A.
Av Pacaembu 811
67-2393

CHILE
Santiago
Interlog LTDA
Casilla 528V
253689

DENMARK
2840 Holte
Iversen & Martens A/S
Hanne Nielson VEJ10
424711

ENGLAND
Tring Herts
Teleprinter Equipment Ltd
70-82 Akeman Street
282-4011/9

FINLAND
Espoo
Technospan
Box 56
35808031292

FRANCE
9220 Bagnevt
Technitron SA
8 Av Aristide Briand
657-11-47

GERMANY, WEST
8000 Munchen 90
Technitron GmBH
Martin Luther Str 20
692-41-41

HONG KONG
Kowloon
Realtime Systems Ltd
132 Austin Rd
290810

INDIA
Pune
Electromark Associates
17A/3 Erandawana
30875

ISRAEL
Tel-Avia
STG International
10 Huberman St
248231

ITALY
20144 Milano
Technitron SRL
12 Via California
469-0312

MEXICO
Mexico 12
Protelsa
Insurgentes Sur-377-205
574-92-10

NEW ZEALAND
Lower Hutt
Anderson Digital Equipment Pty
31 Kings Crescent PO Box 30511
64-693-008

REPUBLIC OF CHINA
Taipei
Suntown and Co
Box 22986
752-9006

SWEDEN
Jarfalla
Ad-Teknik AB
Box 130
46-0758/561

SWITZERLAND
8600 Duebendorf
Rodata AG
Uster Str 120
201613

VENEZUELA
Caracas
Digi-Data CA
Box 70657
387357

TELE-SIGNAL CORP
185 Oser Ave
Hauppauge, NY 11787
516-273-3939
Contact: Stephen Landry

■ Products & Services
Multiplexers, frequency division
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
MIL 188C adapters
Technical control centers
Code converters
Data security devices: encoder/decoders
Pulse and signal regenerators
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment

TELETYPE CORP
5555 Touhy Ave
Skokie, IL 60077
312-982-2000
Advertising page 129
Contact: M A Pedote
■ Products & Services
Tape punch/reader, paper
Remote line printers
Teleprinters, impact
Teletypewriters
Maintenance organizations

Branch Sales Offices:
CA City of Commerce
Teletype Corp
5445 Sheila St
213-724-6040

CA Oakland
Teletype Corp
7305 Edgewater
415-569-9610

MA Westboro
Teletype Corp
131 Flanders Rd Box 566
617-366-1592

NJ Fairfield
Teletype Corp
90 Clinton Rd
201-575-6577

TX Irving
Teletype Corp
222 North Story Rd Suite 124
214-253-5194

TELEVIDEO SYSTEMS INC
1170 Morse Ave
Sunnyvale, CA 94086
408-745-7760
Contact: Joan Green
■ Products & Services
Data entry terminals
Programmable terminals
Interactive terminals
Video data terminals (KSR)

Branch Sales Offices:
AZ Tempe
MicroAge
1618 W 12th Pl
602-894-9247

CA Oakland
Consolidated Data Terminals
477 Roland Wy
415-638-1222

CA Fountain Valley
MQI Computer Products
18381 Bandilier Cir
714-751-2005

CA Santa Clara
R C Data
346 Mathew St
408-988-7510

CA Los Angeles
The David Jamison Carlyle Corp
Two Century Plaza;2049 Century Park E
213-277-4562

CA San Diego
Data Systems Marketing
5710 Ruffin Rd
714-560-9222

CA Foster City
Leasametric
1164 Triton Dr
415-574-4441

CA Tustin
Terminal Rentals Inc
2722 Walnut Ave
714-754-1039

CA Santa Clara
United Components Inc
2520 Mission College Blvd
408-496-6900

CO Englewood
Thorson Rocky Mountain Inc
7076 S Alton Way
303-779-0666

FL Orlando
Gentry Assoc Inc
7527 Currency Dr

IL Rosemont
Information Systems Inc
9806 W Farragut Ave
312-671-7780

KS Shawnee-Mission
Inland Associates Inc
7975 West 63rd St
913-362-2366

MA Cambridge
Compumart Corp
270 Third St
617-491-2700

MA Chelmsford
Computer Peripherals of New England
20 Brentwood Rd
617-272-7380

MA Harvard
Harvard Data
Warren Ave
617-456-8037

MA Wakefield
SelecTerm Inc
2 Audubon Rd
617-246-1300

NJ Warton
ADL Enterprises
Richard Mine Rd
201-328-1300

NJ Fort Lee
Technical Marketing Associates
2460 LeMoine Ave
201-224-6911

NY Rochester
R G Engineers
3100 Monroe Ave
716-385-3021

PA Huntingdon Valley
Marketline Systems Inc
2337 Philmont Ave
215-947-6670

TX Addison
Data Applications Corp
4901 Keller Springs Rd
214-931-1100

TX Dallas
U S Data
14241 Proton Rd
214-661-3363

ONTARIO, CANADA
Toronto Ont
Datamex Ltd
14 Leswyn Rd
416-787-1208

AUSTRALIA
Mt Waverly Victoria
Anderson Digital Equipment
1 Expo Ct
03-543-2077

BELGIUM
Brussels
Teleprint Benelux BV
Wetstraat 34
02-5118150

ENGLAND
Belper Derby
Midlectron
Nottingham Rd
077382-5442

FRANCE
Asnieres Cedex
Metrologie
4 Ave Laurent Cely
1-791-4444

FRANCE
Villiers Sur Marne
Periferic
26-28 Rue Jean Jaures
304-9635

GERMANY, WEST
Eching
Kontron Elecktronik GMBH
Breslauer Strasse 2
089-319011

GERMANY, WEST
Munich
Percom Computer Peripherie GMBH
Eisenaucher Str 10
89-366033

ITALY
Milan
Eurotech Italia SPA
Via S Sofia 18
805-58350

JAPAN
Tokyo
Matsushita Electric Co Ltd
2-Chome Hammamatsu-Chi
03-435-4501

NETHERLANDS
Hertogenbosch
Compudata Benelux BV
Rietveldenweg 49
073-2157000

SCOTLAND
Cwmbran Gwent Wales
Data Type Perminals
Springvale Ind Est
063-33-65307

SO. W. AFRICA (NAMIBIA)
Pretoria
Data Management
Beatrix St
2-3307-8-9

SPAIN
Barcelona
Interface SA
Ronda San Pedro 22 3
3-3017851

SWEDEN
Vasby
Data Com
194 04 Upplands
0760-858-73

TELEX COMPUTER PRODUCTS INC
6422 E 41st St
Tulsa, OK 74135
918-627-1111
Contact: David Lea

■ Products & Services
Disk drives, large
Tape drives, magnetic
Data entry terminals
Interactive terminals
Teleprinters
Terminal controllers
Video data terminals (KSR)
Branch Sales Offices:
CA Garden Grove
Telex Computer Products Inc
12717 Western Ave
714-898-9833
GA Atlanta
Telex Computer Products Inc
2110 Powers Ferry Rd
404-955-7745
IL Park Ridge
Telex Computer Products Inc
1460 Renaissance
312-298-9800
MI Southfield
Telex Computer Products Inc
21411 Civic Center Dr
313-358-1195
NJ Cherry Hill
Telex Computer Products Inc
Rt 70 & Cuthbert Blvd
609-655-8066
ONTARIO, CANADA
Willowsdale Ont
Telex Computer Products Inc
322 Consumers Rd
416-494-4444

TELEX MARKETING COMPANY DIV OF NORTH AMERICAN TELECOMMUNICATIONS CORP
8921 Lindblade St
Culver City, CA 90230
213-204-4400
Contact: Richard P Myers Jr
■ Products & Services
Cartridges
Tape, paper
Tape punch/reader, paper
Remote line printers
Teleprinters, non-impact
Teletypewriters
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers
Used equipment

TEL-TEX INC
2825 W 11
Houston, TX 77008
713-868-6000
Contact: Randy Parks
■ Products & Services
Modem sharing units
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Cassettes
Disks, floppy
Tape, paper
Tape punch/reader, paper
Portable data entry terminals
Remote job entry terminals
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Terminal interfaces
Video data terminals (KSR)
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:
OK Oklahoma City
Tel Tex Inc
1117 S Cornell Pkwy
405-947-3797
OK Tulsa
Tel Tex Inc
5553 S Peoria
918-742-9673
TX Richardson
Tel Tex Inc
709 Lingco
214-231-8077
TX Austin
Tel Tex Inc
8900 Shoal Creek
512-451-8201
TX San Antonio
Tel Tex Inc
103 Biltmore
512-340-5035

TELTONE CORP
10801 120th/NE
Kirkland, WA 98033
206-827-9626
Contact: Dennis Holm
■ Products & Services
Specialized carriers
Multiplexers, statistical (intelligent)
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Branch Sales Offices:
IL Des Plaines
Greg Derringer
1485 Van Buren St
312-635-8625
NY Brooklyn
Walt Nizinski
371 First St
212-788-7572
TX Dallas
George Friend
12023 Snow White Dr
214-241-8947

TELXON CORP.
3330 W Market St
Akron, OH 44313
216-867-3700
Contact: Dennis Kucler

TERMIFLEX CORP
18 Airport Rd
Nashua, NH 03063
603-889-3883
Contact: Vernon C Maine
■ Products & Services
Digital service units
Data entry terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote job entry terminals
Cables, electrical prefabricated extending
Data jacks and plugs
Power supplies
Branch Sales Offices:
AL Huntsville
Sesco Inc
3322 S Memorial Pkwy
205-881-8768
CA Inglewood
Basic Systems Corporation
230 West Florance Ave
213-673-4300
CA Santa Clara
Basic Systems Corporation
2359 De La Cruz
408-727-1800
CA San Diego
Basic Systems Corporation
7152 Convoy Ct
714-268-8000
CT North Haven
Pat Jenks Associates
52 Washington Ave
203-239-6201
DC Washington
Powell-Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535
FL Hallandale
Sesco Inc
409 W Hallandale
305-458-1506
GA Atlanta
Sesco Inc
2231 Perimeter Park
404-458-6423
LA Baton Rouge
Sesco Inc
2852 Kalurah St
504-344-4153
MA Wakefield
Pat Jenks Associates
607 North Ave
617-246-1590
MI Deaborn Hts
Electro Sales Associates
22126 Ford Rd
313-561-0045
NJ Cedar Grove
KLS Associates Inc
1384 Pompton Ave
201-785-4450
NM Albuquerque
Rustco Enterprises
127 General Somervell NE
505-292-2741
NY Utica
NACO Electronics Corp
2631 Edgewood Rd
315-732-1801
NY Fairport
NACO Electronics Corp
17 Port Meadow Trail
716-223-4490
NY N Syracuse
NACO Electronics Corp
Box 276
315-699-2651
NC Greensboro
Sesco Inc
2303 W Meadowview Rd
919-855-1394
OH Dayton
Instrumentation Systems Inc.
1250 W Dorothy Ln
513-294-2838
OH Cleveland
Instrumentation Systems Inc.
3645 Warrensville Center Rd
216-561-6100
OH Dayton
Electro Sales Associates
1635 Mardon Dr
513-426-5551
OH Cleveland
Electro Sales Associates
851 East 222nd St
216-261-5440

OK Tohsa
Sesco Inc
9726 E 42nd St
918-622-3868

OR Portland
Scientific Devices
2035 SW 58th
503-292-6934

PA Pittsburgh
Instrumentation Systems Inc
201 Penn Center Blvd
412-243-1111

PA Willow Grove
Powell-Pendergraph Inc
801 Easton Rd
215-657-0330

PA Allison Park
Electro Sales Associates
3740 Mount Royal Blvd
412-487-3801

TX Houston
Sesco Inc
4540 West 34th St
713-688-9656

TX Dallas
Sesco Inc
13531 N Central Expwy
214-231-9364

TX San Antonio
Sesco Inc
4438 Centerview Dr
512-733-1032

VA Glen Allen
Powell-Pendergraph Inc
8816 Washington Hwy
804-264-2341

WA Bellevue
Scientific Devices
10843 NE 8th St
206-454-0900

TERMINAL DATA CORP
11878 Coakley Circle
Rockville, MD 20852
301-881-7655
Contact: L Teitelbaum
■ Products & Services
Acoustic couplers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Modem eliminators
Cartridges
Disk drives, floppy
Disks, floppy
Disk packs
Floppy disk recorders
Tape, magnetic
Tape, paper
Data entry terminals
Programmable terminals
Portable data entry terminals
Video data terminals (KSR)
Cables, electrical prefabricated extending
Code converters
Computer/communications interfaces
Furniture, cabinets, terminal enclosures
Protocol converters
Lease and resale organizations
Maintenance organizations
Used equipment
Branch Sales Offices:

IL Addison
R Edward Stemm
17 W 480 Lake St
312-279-2440

MD Columbia
A A Computer Supplies
7181 Peace Chimes
301-997-4949

NJ Wayne
R A Sales
30 Galeso Dr
201-256-8500

OH Medina
McShane Inc
Box 523
216-725-4568

ONTARIO, CANADA
Ottawa
L Albert Assoc
2264 Stevenage Dr
613-737-5941

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

TERMINAL RENTALS INC
PO Box 1484
Orange, CA 92668
714-832-2414
Contact: Al Zingaro
■ Products & Services
Acoustic couplers
Cassettes
Programmable terminals
Remote job entry terminals
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Word processors, communicating
Paper for terminals
Lease and resale organizations
Maintenance organizations
Branch Sales Offices:

AZ Phoenix
Terminal Rentals Inc
2430 S 20 St
602-258-4466

CA Tustin
Terminal Rentals Inc
2722 Walnut Ave
714-832-2414

CA San Jose
Terminal Rentals Inc
2444 Moorpark Ave
408-292-9915

TESDATA SYSTEMS CORP
7921 Jones Branch Dr
McLean, VA 22102
703-827-4000
Contact: Larry Hart
■ Products & Services
Error rate detectors
Response-time monitors
Network management centers
Technical control centers
Branch Sales Offices:

CA San Mateo
Tesdata Systems Corp
3130 La Selva Suite 104
415-573-6022

CA El Segundo
Tesdata Systems Corp
888 No Sepulveda Blvd
213-640-1155

IL Deerfield
Tesdata Systems Corp
2275 Halfday Rd
312-948-8700

MI Southfield
Tesdata Systems Corp
27777 Franklin Rd
313-352-2890

NJ Englewood Cliffs
Tesdata Systems Corp
333 Sylvan Ave
201-871-1300

TX Houston
Tesdata Systems Corp
123 North Point Dr
713-445-3700

VA McLean
Tesdata Systems Corp
7921 Jones Branch Dr
703-827-4144

ENGLAND
Slough
Tesdata Ltd
Tesdata House;Hatfield Rd
011-44-753-71961

FRANCE
ISE Paris
Tesdata SA
104 rue de Castanary
011-33-1-533-7300

GERMANY, WEST
Frankfurt
Tesdata GmbH
Am Lindenbaum 24
011-49-611-520181

TEXAS INSTRUMENTS DIGITAL SYSTEMS GROUP
PO Box 1444, MS 7884
Houston, TX 77001
713-373-1050
Contact: Terminal Marketing
■ Products & Services
Front-end processors
DDP systems
Minicomputers
Cartridge drives
Disk packs
Tape drives, magnetic
Batch terminals
Data entry terminals
Programmable terminals
Interactive terminals
Point of sale terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Teleprinters
Teleprinters, impact
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Branch Sales Offices:

AL Birmingham
Texas Instruments Inc
2125 Dataoffice Dr
205-987-0514

AZ Phoenix
Texas Instruments Inc
8152 W 23 Ave
602-242-1200

CA Costa Mesa
Texas Instruments Inc
3186 Airway
714-540-7311

CA El Segundo
Texas Instruments Inc
831 S Douglas St
213-973-2571

CA San Diego
Texas Instruments Inc
4333 Viewridge Ave
714-278-9600

CA San Francisco
Texas Instruments Inc
100 California St #480
415-781-9470

CA Sunnyvale
Texas Instruments Inc
776 Palomar Ave
408-732-1840

CA Woodland Hills
Texas Instruments Inc
21220 Erwin St
213-704-7750

CO Denver
Texas Instruments Inc
9725 E Hampden Ave
303-695-2800

CT Wallingford
Texas Instruments Inc
9 Barnes Industrial Park Rd
203-269-0074

FL Fort Lauderdale
Texas Instruments Inc
2765 NW 62nd St
305-937-8502

FL Winter Park
Texas Instruments Inc
1850 Lee Rd
305-644-3535

GA Atlanta
Texas Instruments Inc
3300 Northeast Exprwy
404-452-4600

HI Honolulu
Texas Instruments Inc
1600 Kapiolani Blvd
808-955-2617

IL Arlington Heights
Texas Instruments Inc
515 W Algonquin Rd
312-640-2900

IN Indianapolis
Texas Instruments Inc
2346 S Lynhurst
317-248-8555

IN Fort Wayne
Texas Instruments Inc
2020 Inwood Dr
219-424-5174

LA Baton Rouge
Texas Instruments Inc
923 Executive Park Ave
504-927-9280

MD Baltimore
Texas Instruments Inc
7133 Rutherford Rd
301-944-8600

MA Waltham
Texas Instruments Inc
504-1 Totten Pond Rd
617-890-7400

MI Farmington Hills
Texas Instruments Inc
33737 W 12 Mile Rd
313-553-1500

MI Grand Rapids
Texas Instruments Inc
6140 28th St SE
616-957-4200

MN Edina
Texas Instruments Inc
7625 Parklawn Ave
612-830-1600

MO Kansas City
Texas Instruments Inc
8080 Ward Pkwy
816-523-2500

MO St Louis
Texas Instruments Inc
11861 Westline Industrial Dr
314-569-7606

NE Omaha
Texas Instruments Inc
407 N 17 St
402-330-2510

NJ Clark
Texas Instruments Inc
1245 Westfield Ave
201-574-9800

NY Albany
Texas Instruments Inc
16 Computer Dr West
518-459-5260

NY New York
Texas Instruments Inc
1270 Ave of the Americas
212-246-6165

NY Rochester
Texas Instruments Inc
1210 Jefferson Rd
716-424-5400

NC Charlotte
Texas Instruments Inc
8 Woodlawn Green
704-527-0930

OH Beachwood
Texas Instruments Inc
23408 Commerce Park Rd
216-464-6100

OH Dayton
Texas Instruments Inc
4124 Linden Ave
513-258-3877

OH Blue Ash
Texas Instruments Inc
9912 Carver Rd
513-793-4750

OK Tulsa
Texas Instruments Inc
3105 E Skelley Dr
918-749-9546

OR Beaverton
Texas Instruments Inc
6700 SW 105th
503-643-6758

PA Coraopolis
Texas Instruments Inc
420 Rouser Rd
412-771-8550

PA Ft Washington
Texas Instruments Inc
575 Virginia Dr
215-643-6450

TN Brentwood
Texas Instruments Inc
2 Maryland Farm
615-373-5190

TN Memphis
Texas Instruments Inc
6584 Poplar Ave
901-761-1897

TX Dallas
Texas Instruments Inc
8001 Stemmons Exprwy;M/S 3108
214-689-4460

TX Houston
Texas Instruments Inc
9900 Southwest Frwy
713-778-6577

TX San Antonio
Texas Instruments Inc
1938 Northeast Loop 410
512-828-9101

UT Salt Lake City
Texas Instruments Inc
3672 W 2100 So
801-973-6310

VA Fairfax
Texas Instruments Inc
3001 Prosperity Ave
703-849-1400

VA Richmond
Texas Instruments Inc
2737 McRae Rd
804-320-5802

WA Redmond
Texas Instruments Inc
2723 152nd Ave NE
206-881-3080

WI Brookfield
Texas Instruments Inc
205 Bishops Way
414-784-1323

BRITISH COLUMBIA, CANADA
Richmond BC
Texas Instruments Inc
10451 Shellbridge Way
604-278-4871

BRITISH COLUMBIA, CANADA
Richmond
Texas Instruments Inc
10451 Shellbridge Way
604-278-8474

ONTARIO, CANADA
Richmond Hill ON
Texas Instruments Inc
280 Centre St E
416-884-9181

ONTARIO, CANADA
Richmond Hill
Texas Instruments Inc
280 Centre St East
416-884-9181

QUEBEC, CANADA
Ontario
Texas Instruments Inc
9460 TransCanada Hgwy
514-334-3511

QUEBEC, CANADA
Quebec H4S 1R7
Texas Instruments Inc
9460 Trans Canada Hwy
514-334-3511

AUSTRALIA
Sydney
Texas Instruments Ltd
Box 106 NSW 2113
03 887-1122

AUSTRALIA
Victoria
Texas Instruments Australia Ltd
60 Albert Rd
03 6995788

AUSTRALIA
Elizabeth
Texas Instruments Austrailia LTD
Box 63
255-2066

AUSTRIA
A 23HS Brumm
Texas Instruments Gsmbh
Industriestrasse B16
84 621-0

BELGIUM
Bruxelles 1130
Texas Instruments Belgium SA
Rue de la Fusee
1/720.80.00

DENMARK
Copenhagen
Texas Instruments A/S
2730 Herlev
01/91.74.00

ENGLAND
Bedford
Texas Instruments Ltd
Manton Ln;M/S 4223
0234-67466

ENGLAND
Stockport SK4 2RT
Texas Instruments Ltd
St James House
442-8448

ENGLAND
Slough
Texas Instruments Ltd
186 High St
0753-33411

FINLAND
Helsinki
Texas Instruments Finland
Teollisuuskatu 190 Box 56
701 3133

FRANCE
Lyon
Texas Instruments France
30-31 Quai Rambaud
78 42 78 50

FRANCE
Cedex
Texas Instruments France
8-10 Ave Moranesaumier
946-9712

FRANCE
06270 Villeneuve-Loubet;Nice
Texas Instruments France
Boite Postale 5
93 20.01.01

GERMANY, WEST
Germany
Texas Instruments Deutschland GmbH
111 Hagen 43
0201/23 35 51

GERMANY, WEST
Germany
Texas Instruments Deutschland GmbH
6236 Eschborn
06196/4096

GERMANY, WEST
Germany
Texas Instruments Deutschland GmbH
8050 Freising
08161/80-1

GERMANY, WEST
2000 Hamburg
Texas Instruments Deutschland GmbH
040/2201156

GERMANY, WEST
8000 Munchen 81
Texas Instruments Deutschland GmbH
089/32 50 11

GERMANY, WEST
Nelligen WG
Texas Instruments Deutschland
7302 Ostfildern2
547001

HONG KONG
Hong Kong
Texas Instruments Asia LTD
Room 902 Asian House
5-279041

ITALY
Milan
Texas Instruments Italia SPA
20093 Cologno Monzesel/Miland
02 2532451

ITALY
Turin
Texas Instruments Italia SPA
Edificio Pier Della Francesca
011 832276

ITALY
Roma
Texas Instruments Italia SPA
Via Salaria 1319
06 6917157

JAPAN
Minato-Ku
Txas Instruments Inc
3-6-12 Kita-Aoyama
03 498-2111

JAPAN
Yodogawa-Ku Osaka 532
Texas Instruments Asia Ltd
9-2 5-Chome Nishi Nakajima-Cho
06-304-9300

NETHERLANDS
1180 AG Amstelveen
Texas Instruments Holland BV
Box 283
020 473 391

NETHERLANDS
Cruquius
Texas Instruments Holland BV
2142 GN
290380

NORWAY
Oslo 1
Texas Instruments Norway A/S
Kr Augusts gt 13
02 206040

SINGAPORE
Republic of Singapore
Texas Instruments Asia Ltd
990 Bendemeer Rd
258-1122

SPAIN
Barcelona
Texas Instruments Espana SA
C/Balmes 89-91 -2 4
03/2152950

SWEDEN
S-100 54 Stockholm
Texas Instruments Sweden AB
08/235480

SWITZERLAND
8040 Zurich
Texas Instruments Switzerland
Aargauerstrasse 250
01643455

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

TEXPRINT INC
8 Blanchard Rd
Burlington, MA 01803
617-273-3384
Contact: Bill Northfield
■ Products & Services
Teleprinters
Teleprinters, non-impact

3 COM CORP
1390 Shorebird Way
Mt View, CA 94043
415-961-9602
Contact: Bob Metcalfe
■ Products & Services
Local networks
Local network interfaces
Local network software
Transport software
Branch Sales Offices:
IL Chicago
First Rep Company
9420 West Faster
312-992-0830
MD Gaithersburg
Mesa Inc
16021 Industrial Dr
301-948-4350
MA Needhan
J J Wild Inc of New England
570 Hillside Ave
617-444-2366
NY Great Neck
Measurement Technology Inc
159 Northern Blvd
516-482-3500

3M CO
INTERACTIVE SYSTEMS DIV.
3980 Varsity Drive
Ann Arbor, MI 48104
313-973-1500
Advertising page 65

3M CO
BUSINESS COMMUNICATIONS PRODUCTS
3M Center
St Paul, MN 55101
Contact: Mort Nahan
■ Products & Services
Facsimile terminals
Teleprinters
Teleprinters, non-impact

3M COMPANY
STATIC CONTROL DIV
3M Center-223-2SW
St Paul, MN 55144
612-733-9420
Contact: Robert J Kunz

THREE PHOENIX CO
21639 N 14 Ave
Phoenix, AZ 85027
602-242-6300
Contact: Jim Greene
Branch Sales Offices:
CA San Jose
Manufacturing Prod Spec
1741 Saratoga Ave
408-866-8430
FL Sarasota
William J Irvine Co
2146 Thirteenth Dr
813-955-9656
MN Minneapolis
Engineering Products Assoc
4316 Upton Ave S
612-925-1883

TIFFANY STAND AND FURNITURE CO
1055 Corporate Square Dr
St Louis, MO 63132
314-991-1700
Contact: Bevan Fountain
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
AL Montgomery
Kogco Inc
2901 Fernway
205-834-1934
AZ Phoenix
The Office Warehouse
2246 S Central
602-943-2418
AZ Glendale
Conwell Co Inc
15809 N.47th Ln
602-942-2062
CA City of Commerce
The Office Warehouse
2210 Davie Ave
213-721-6072
CA Burlingame
Office Products Suppliers Inc
1499 Bayshore Hwy
415-697-7493

CA Cameron Park
Office Products Suppliers Inc
3089 Gateway
916-677-1108

CO Denver
Conwell Co Inc
451 E 58th Ave
303-573-5443

FL Ft Lauderdale
Kogco Inc
524 Orton Ave
305-563-7171

FL Margate
Kogco Inc
5361 NW 30th Ct
305-973-1745

FL Orlando
Kogco Inc
4039 Tamarisk Way
305-677-1980

FL St Petersburg
Kogco Inc
6191 Sixth Ave
813-384-4030

GA Atlanta
Kogco Inc
181 10th St NE
404-875-0372

GA Norcross
Kogco Inc
3921 Centre Ct
404-448-5795

IL Chicago
Paul Coriden & Associates
5501 West Irving Pk Rd
312-286-5144

KS Merriam
Paul Coriden & Associates
6700 Mastin
913-236-4527

KY Louisville
Paul Coriden & Associates
2406 Chadford Way
502-426-4237

LA Metairie
Roark Associates
4513 Kent Ave
504-887-5613

MD Annapolis
Martin M Moldow Associates
20 Silverwood Circle 2
301-263-3082

MA Winchester
Martin M Moldow Associates
7-17 Church St
617-729-4315

MI Birmingham
Paul Coriden & Associates
6605 Indianwood Trl
313-851-9099

MI Royal Oak
Paul Coriden & Associates
4412 Cooper
313-549-8053

MI Sterling Hgts
Paul Coriden & Associates
37191 Dundee
313-264-8928

MN Bloomington
Paul Coriden & Associates
1003 East 80th St
612-854-4057

MN Plymouth
Paul Coriden & Associates
18535 5th Ave
612-473-6652

MO Creve Coeur
Paul Coriden & Associates
831 Montmartre Ct
314-434-9623

NE Omaha
Paul Coriden & Associates
11406 Saratoga
402-496-0605

NJ Fort Lee
Martin M Moldow Associates
2175 Lemoine Ave
201-461-7970

NY Rochester
Martin M Moldow Associates
169 Crawford
716-442-1078

NC Charlotte
Kogco Inc
11532 Turnstone Ct
704-542-8149

NC Raleigh
Kogco Inc
400 Clover Ln Apt A
919-833-6950

OH Westlake
Paul Coriden & Associates
26367 Westwood Rd
216-871-5045

OR Tigard
Williams-Goad Associates
15160 SW 133rd St
503-222-5426

PA Berwyn
Martin M Moldow Associates
119 Cherry Ln
215-647-9447

PA Pittsburgh
Martin M Moldow Associates
1168 McCabe St
412-781-7539

PA Fairfield
Kogco Inc
Meadow Trail & Valley View
717-642-5957

TN Germantown
Kogco Inc
7214 Eastern Ave
901-755-5110

TN Germantown
Kogco Inc
1826 Hunters Creek Dr
901-755-1014

TX Duncanville
Roark Associates
735 Mercury Ave
214-296-1874

TX Houston
Roark Associates
9730 Beversbrook Dr
713-495-6716

TX Spring
Roark Associates
6122 Knollview
713-376-6793

UT Salt Lake City
Conwell Co Inc
3605 Hillside Ln
801-278-1860

WA Seattle
Williams-Goad Associates
1250 1st Ave
206-624-6227

TII INDUSTRIES INC
1375 Akron St
Copiague, NY 11726
516-789-5000
Contact: George Deger
Branch Sales Offices:

CA Redwood City
Ault Associates
1572 Union Ave
415-367-1710

GA Norcross
Remote Control Systems Inc
6700-1A NE Expwy Access Rd
404-447-9777

IL Elk Grove Village
IRO Company
1701 Carmen Dr
312-593-0644

MA Burlington
New England Alarm Co
119 Muller Rd
617-862-6069

MN Minneapolis
El Pak Co Inc
4964 No County Rd 18
612-535-2671

NJ Waterford
Disc Sales
222 Conrad Ave
609-768-2534

NY Great Neck
Ef-Tee Sales
425 Northern Blvd
516-466-9070

NC Raleigh
Noramco Inc
Box 18763
919-876-6262

OH Chagrin Falls
Neptune Inc
Box 473
216-247-7030

OR Tigard
I/C Systems
14260 SW High Tor Dr
503-639-0334

TX Rockwall
Horizon Engineering Sales Co
Box 768
214-226-4712

VT Bethel
Clifford of Vermont
Box 51
802-234-9921

TIME & SPACE PROCESSING INC
3410 Central Expwy
Santa Clara, CA 95051
408-730-0200
Contact: Rick Pitz
■ Products & Services
Digitized-voice processors
Voice adapters
Voice digitizers
Branch Sales Offices:

MI Grand Rapids
Time and Space Processing Inc
3040 Charlevoix SE
616-942-7142

VA Arlington
Time and Space Processing Inc
2300 Ninth St South
703-920-6031

ONTARIO, CANADA
Ottawa
Peter Lawrence
239 Grandview Rd
613-226-3227

JAPAN
Tokyo
Rikei Corp
1-18-14 Nishi-Shimbashi-Minato Ku
03-345-1411

TIMEPLEX INC
One Communications Plaza
Rochelle Park, NJ 07662
201-368-1113
Advertising page 45
Contact: Bill Smith

■ Products & Services
Concentrators
Front-end processors
Multiplexers, frequency division
Multiplexers, time division
Multiplexers, statistical (intelligent)
Multiplexers, group band
Packet processors
Modems, limited distance
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Network management centers
Technical control centers
Minicomputers
Automatic calling units
Error controllers
Branch Sales Offices:
CA San Jose
Timeplex Inc
1798 Technology Dr
408-288-9650
CA Lacanada/Flintridge
Timeplex Inc
4529 Angeles Crest Hgwy
213-790-5716
CO Thornton
Timeplex Inc
13007 Clayton Ct
303-629-1894
GA Atlanta
Timeplex Inc
3300 Buckeye Rd
404-452-1640
IL Schiller Park
Timeplex Inc
4849 North Scott St
312-678-1537
MO St Louis
Timeplex Inc
1810 Craig Rd
314-576-7005
NJ Hasbrouck Heights
Timeplex Inc
777 Terrace Ave
201-487-4700
TX Dallas
Timeplex Inc
9550 Forrest Ln
214-340-0300
VA Fairfax
Timeplex Inc
4103 Chain Bridge Rd
703-385-3979
WA Bellvue
Timeplex Inc
10909 NE 4th St
206-451-8541

TIMES WIRE & CABLE
DIV OF TIMES FIBER
COMMUNICATIONS INC
358 Hall Av
Wallingford, CT 06492
203-265-8500
Contact: John Palasciano
■ Products & Services
Cables, electrical prefabricated extending
Cables, lightwave (optical fiber)
Branch Sales Offices:
AL Huntsville
20th Century Mktg
Box 6127, Hertz Skycenter
205-772-9237
AZ Scottsdale
Mercury Engineering Sales
Box 3130
602-994-5054
CA Pico Rivera
Westrep
9519 Telegraph Rd
213-949-2551
CO Denver
Lindberg Co
6140 E Evans Av
303-758-9033
FL Ft Lauderdale
CBC Elect
3876 W Commercial Blvd
305-755-1111
HI Honolulu
Dougherty Enterprises
1001 Dillingham Blvd
808-847-4144
IL Berkeley/Hillside
Balhorn & Roeser
1758 Taft Av
312-449-3900
KS Overland Pk
PMA Corp
5750 W 95 St
913-381-0004
MD Rockville
Mechtronics Sales Inc
Box 1037
301-340-2130
MA Clinton
F J Coleman & Co
Box 241
617-368-0116
MI Farmington Hills
Lowell-Wendt Mktg
27660 Farmington Rd
313-553-9800
MN Bloomington
ESA
8053 E Bloomington Frwy
612-884-8291
NY Syracuse
Electra Sales Corp
104 Pickard Dr
315-463-1248
NC Winston-Salem
DGW Inc
Box 5316
919-768-7166
OH Cleveland
Baehr Greenleaf Assocs
14700 Detroit Ave
216-221-9030
PA Glenside
The Griffin Co
363 Glenside Av
215-646-8383
TX Dallas
Ammon & Rizos
255 LBJ Frwy
214-233-5592
WA Bellevue
Eltech
13219 Northrup Way
206-643-4330
ONTARIO, CANADA
Markham
Deskin Sales Corp
77B Steelcase Rd W
416-495-1412

TMI SYSTEMS CORPORATION
83 Hartwell Ave
Lexington, MA 02173
617-861-7700
Contact: Randall C Fong
■ Products & Services
Front-end processors
Message switchers
Local network interfaces
Applications packages
Switches, data communications: automatic
Branch Sales Offices:
CA San Francisco
TMI Systems Corporation
350 Sansome St
415-781-0290
NY New York
TMI Systems Corporation
80 Pine St
212-344-8840
TX Dallas
TMI Systems Corporation
1341 W Mockingbird Ln
214-638-1270

TOMINY INC
4152 Crossgate Dr
Cincinnati, OH 45236
513-984-6605
Contact: Andrew J Tate
■ Products & Services
Applications packages
Custom programs
DDP systems software
Operating systems
Branch Sales Offices:
CA Sausalito
Cogit, Inc
3030 Bridgeway
415-332-9403
TX Dallas
Symbolics, Inc
4580 Beltway Dr, West
214-386-9246

TOPAZ DPP DIV
3857 Ruffin Rd
San Diego, CA 92123
714-292-1711
Contact: E D Jacobsen
■ Products & Services
Power Distribution-Regulation
Uninterruptible power supplies, line correctors, etc
Branch Sales Offices:
CA Carson
Computer Facilities Service Grp
1145 Dominguez, #K
213-515-7457
CA San Mateo
DATASYTE
Box 1811 St Matthews
415-579-1110
CA Rancho Cordova
Cal-Mod
11505 Douglas Rd
916-351-0745
CO Denver
Price Business Interiors
755 S Federal Blvd
303-922-3638
FL Orlando
Gra-Mar Inc
3165 McCrory Pl
305-894-3351
HI Honolulu
E D P Products
743 Waiakamile Rd
808-845-6417

IN Indianapolis
Sukup & Cox Inc
2060 E 54th St
317-253-5501

IA Des Moines
Tab Products
3832 Douglas
515-277-6104

KS Shawnee
Atech
Box 3334
913-268-9644

MD Towson
Sun-Ray Enterprises Inc
799 Galliton Ln
301-484-3520

MI Lansing
Data Supplies Company
320 N Washington
517-484-0912

MO St Louis
Conner Universal
8216 Brentwood Ind Dr
314-644-4640

NH Londonderry
Power Conversion Sys
4k Professional Bldg
603-434-2371

NJ Clifton
Polygon Data Products
1135 Clifton Ave
201-773-3100

NJ Cherry Hill
Gary Pache
401 Jamaica Dr
609-667-5941

NM Albuquerque
Sun Data Systems
16 Casa Hermosa NE
505-292-1022

NM Albuquerque
Trembly Associates
119 Quincy NE
505-266-8616

NY New York
Walter Robinson
2919 Greene Pl
212-792-2250

NY E Syracuse
Ossman Instruments Inc
6666 Old Collamer Rd
315-437-6666

OH Rising Sun
Mecom Inc
7033 Sandusky Rd
419-457-3231

OH Dayton
Energy Management Equip Co
2176 Hewitt Ave
513-434-7130

PA Pittsburgh
Keystone Forms & Supply
666 Washington Rd
412-341-2001

TX Houston
System Technology Assoc
15111 Mintz Ln
713-440-8340

VA Annandale
Government Sales Inc
4407 Cirrico Dr
703-354-4065

WA Issaquah
William A Lemley
19818 SE 23rd St
206-392-2161

TOPAZ, INC/POWERMARK DIV
3855 Ruffin Rd
San Diego, CA 92123
714-565-8363
Contact: Laurie Spence
■ Products & Services
Power supplies

TOPAZ, INC/TOPAZ ELECTRONICS DIV
9192 Topaz Way
San Diego, CA 92123
714-279-0831
Contact: Jerry McAllister
■ Products & Services
Uninterruptible power supplies, line correctors, etc

Branch Sales Offices:

AK Anchorage
John P Bagoy & Assoc
3210 Rampart Dr
907-274-8531

CA Cerritos
Traver Assoc
13153 E Beach St
714-521-0053

CA La Jolla
Wheelock Assoc
Box 328
714-454-3473

CA Sunnyvale
Lee Allen Assoc
540 Weddell Dr
408-734-2100

CA Pasadena
A F Sales Engineering
1000 East Walnut St
213-681-5631

HI Honolulu
Industrial Electronics
Box 125
808-533-6095

IL Schaumburg
Carvel Engineering & Sales
870 E Higgins Rd
312-885-8800

KS Shawnee
Atech
10704 W 52 Cir
314-441-5010

MI Farmington Hills
Carter McCormick & Pierce
23995 Freeway Park Dr
313-477-7700

NH Nashua
Power Conversion Systems
92 Main St
603-889-8262

NJ Englewood Cliffs
Power Conversion and Control
Box 1251
201-569-0015

NM Albuquerque
BFA Corp
3705 Westerfield NE
505-292-1212

NY Syracuse
Ossmann Instruments
6666 Old Collamer Rd
315-437-6666

PA Valley Forge
J E Cuesta & Co
Box 188
215-265-5800

TX Houston
SESCO
4540 W 34 St
713-688-9656

WA Glen Allen
Powell-Pendergraph
8816 Washington Hwy
804-264-2341

ONTARIO, CANADA
Mississauga
Webster Instruments
Box 427
416-275-2270

DENMARK
Naerum
SC Metric A/S
02-80-42-00

ENGLAND
London
Euro Electronic Inst
27 Camden Rd
01-2672748/9

FINLAND
Tapiola
Finn Metric OY
90-46-08-44

FRANCE
Severes
Tekelec Airtronic
City des Bruyeres; Rue Carle Vernet
1-027-75-35

GERMANY, WEST
Bremen
Euroatlas GmbH
Zum Panrepel 2
04-21-48631

ITALY
Milano
Silectron SPA
Via Boccaccio 2
02-899279

NETHERLANDS
Breda
Klaasing-Reuvers BV
Heerbaan 222
076-879520

NORWAY
Oslo
Metric AS
PB 80 Bekkelagshgd
02-28-26-24

SPAIN
Madrid
Unitronics SA
Princesa 1
242-52-04

SWEDEN
Banvaktsvagen
Scandia Metric AB
08-82-04-00

SWITZERLAND
Erenbach
Witmer Elektronik AG
Seestrasse 141
01-915-35-61

TOTEC, USA
19151 Parthenia St
Northridge, CA 91324
213-993-9413
Contact: Leo Benitez
■ Products & Services
Word recognition units

Branch Sales Offices:

JAPAN
Shinagawa-Ku, Tokyo
Totec Co Ltd Gotanda C & S Bldg
Nishi Gotanda 1-3-8
011 81-3-490-0661

TRANSCOM INC
SUB OF HI-G INC
580 Spring St
Windsor Locks, CT 06096
203-623-2481
Contact: James J O'Donoghue
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Audio response units
Data entry terminals
Programmable terminals
Portable data entry terminals

TRANS-LUX CORP
110 Richards Ave
Norwalk, CT 06854
203-853-4321
Contact: Michael R Mulcahy
■ Products & Services
Data entry terminals
Remote line printers
Teleprinters, impact
Teletypewriters
Paper for terminals
Branch Sales Offices:
FL Miami
Trans-Lux Corp
12294 SW 29 Terrace
305-221-2890
GA College Park
Trans-Lux Corp
510 Plaza Dr Airport Plaza
404-768-3728
IL Chicago
Trans-Lux Corp
175 W Jackson Blvd
312-922-6616
NJ Lindenwold
Trans-Lux Corp
1006 Central Ave
609-346-0909
NY New York
Trans-Lux Corp
90 W St
212-349-8404
NY Baldwin
Trans-Lux Corp
3139 Western Blvd
516-764-1000
OH Parma Heights
Trans-Lux Corp
6822 Beeresford Ave
216-845-8549
TX Dallas
Trans-Lux Corp
9982 Monroe Dr
214-357-1801

TRANSNET CORP
1945 Rt 22
Union, NJ 07083
201-688-7800
Contact: Clarence J Reed
■ Products & Services
Acoustic couplers
Microcomputer/ microprocessor systems
Minicomputers
Disk drives, floppy
Disk packs
Data entry terminals
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Teleprinters
Teleprinters, non-impact
Teletypewriters
Video data terminals (KSR)
Video data terminals (RO)
Personal computer communications software
Word processing packages
Cables, lightwave (optical fiber)
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

TRANSTECTOR SYSTEMS
Box 1299
Post Falls, ID 83854
800-635-2537
■ Products & Services
Uninterruptible power supplies, line correctors, etc

TRAN TELECOMMUNICATIONS CORP
A SUB OF AMDAHL CORP
2500 Walnut Ave
Marina Del Rey, CA 90291
213-822-3202
Advertising page Cover 2
Contact: Owen Frances
■ Products & Services
Concentrators
Front-end processors
Modem sharing units
Multiplexers, time division
Multiplexers, group band
Packet processors
Port selectors
Remote network processors
Digital service units
Modems, limited distance
RTS emulator
Network management centers
Branch Sales Offices:
AZ Glendale
TRAN
5803 W Palmaire
602-931-7421
IL Rosemont
TRAN
6400 Shafer Ct
312-692-5944
NJ Mountainside
TRAN
1122 Route 22
201-233-8800
TX Bellaire
TRAN
5959 W Loop So
713-668-6177
WA Renton
Tran
15 S Grady Way
206-226-5802
ALBERTA, CANADA
Tran
4801 Massachusetts Ave
202-362-7772
ONTARIO, CANADA
Toronto
TRAN Communications Ltd
1320 Shawson Dr
416-678-9504
ENGLAND
Swindon
Tran Telecommunications Ltd
112-118 Cricklade Rd
44-793-45676
ITALY
Milano
Digital Network Engineering SPA
Corso Porta Vigentina 33
392-546-1551
JAPAN
Tokyo
Sumitomo Shoji Kaisha Ltd
2.2 Hitotsubashi 1-chome
Chiyada-ku
03-217-6023
SOUTH AFRICA
Johannesburg
TRAN Systems Ltd
5 Andrea Rd 2091 Reuven
11-683-6846

TRENDATA/STANDARD MEMORIES
3400 Segerstrom Ave
Santa Ana, CA 92704
714-540-3605
Contact: Frank Monahan
■ Products & Services
Concentrators
Acoustic couplers
Modems, voice-grade, low-speed (0-1,200 b/s)
Add-on main memory
Interactive terminals
Teleprinters, impact
Terminal controllers
Terminal interfaces
Video data terminals (KSR)
Code/protocol conversion programs
Emulation packages
Protocol converters
Branch Sales Offices:
AZ Phoenix
Trendata/Terminals
221 E Camelback St
602-264-9524
CA Santa Ana
Trendata/Terminals
3400 W Segerstrom Ave
714-540-3605
CA San Francisco
Trendata/Terminals
649 Mission St at New Montgomery
415-957-1422
CA San Diego
Trendata/Terminals
4250 Pacific Hwy
714-225-1422
CA Santa Clara
Trendata/Terminals
2362 Walsh Ave
408-727-4644
CA Sacramento
Trendata Corporation
530 Bercut Dr
916-442-3046
CT Hartford
Trendata/Terminals
Box 469
203-242-0755
FL Miami
Trendata/Terminals
1405 NW 167th St
305-624-2313
GA Atlanta
Trendata/Terminals
2028 Powers Ferry Rd
404-955-3944
IL Park Ridge
Trendata/Terminals
1420 Renaissance Dr
312-296-1184
MD Bethesda
Trendata/Terminals
4720 Montgomery Ln
301-986-0067

MA Dedham
Trendata/Terminals
850 Rear Providence Hwy
617-329-5720

MI Detroit
Trendata/Terminals
23777 Greenfield St
313-569-7525

NJ Ringwood
Trendata/Standard Memories
Box 135
201-529-4545

NJ Union
Trendata/Terminals
Box 1656
201-964-6470

NY New York
Trendata/Terminals
555 West 57th St
212-977-4115

OR Portland
Trendata/Terminals
10175 SW Barbur Blvd
503-245-8294

TX Dallas
Trendata Corporation
1341 W Mockingbird Ln
214-630-7300

WA Federal Way
Trendata/Terminals
33100 Pacific Hwy So
206-838-2437

ALBERTA, CANADA
Calgary
Trendata Canada Ltd
1916 30th Ave
403-276-7931

BRITISH COLUMBIA, CANADA
Vancouver
Trendata Canada Ltd
7 West 7th Ave
604-879-6368

ONTARIO, CANADA
Downsview
Trendata/Terminals
125 Norfinch Dr
416-667-9815

ONTARIO, CANADA
Ottawa
Trendata/Terminals
2615 Blackwell St
613-745-7091

ONTARIO, CANADA
Montreal
Trendata Canada Ltd
1162 St Antoine St
514-866-6331

TRENDCOM/3M
480 Oakmead Pkwy
Sunnyvale, CA 94086
Contact: Noel Lyons
■ Products & Services
Portable data entry terminals
Teleprinters

TRICOM INC
7304 Grove Rd
Frederick, MD 21701
301-694-6666
Contact: Fred Schaub
■ Products & Services
Multiplexers, frequency division
Multiplexers, group band
Switches, data communications: automatic
Branch Sales Offices:

AL Huntsville
Burnette Techno-Metrics
Box 1056
205-772-0113

CA Palo Alto
Egbert Engineering Assoc
801 Welch Rd
415-326-1387

CA San Diego
L L Stoakes
10951 Sorrento Valley Rd
714-752-1600

FL Orlando
Truex Associates
4864 South Orange Ave
305-859-2160

MD Ashton
Blackwood Associates
17904 Ednor View Terr
301-924-2858

NM Albuquerque
Grady Moore Associates
5901 Gibson Blvd SE
505-262-1416

NC Virginia Beach
Charles Verget Associates
124 Parlament Dr

OH Euclid
Bradcor Electronics
27801 Euclid Ave 450
216-261-0888

TX Arlington
Houston Associates
Box 5232
817-265-2931

FRANCE
94160 St Mande
Genelec
101 Ave de Paris
808-85-53

GERMANY, WEST
Post fach
Rohde & Schwarz Eng
Franz Rossing
10-15-44

INDIA
Chembur Bombay
Indotek
21 Union Pk
374-345

REPUBLIC OF CHINA
Taipei Taiwan
CCT Associates Inc
Box 24209
02-393-5760

SWEDEN
S300 03 Halmstat 3
XI Instrument AB
Box 3087
035-110-21-31

TRI DATA
505 E Middlefield Rd
Mountain View, CA 94043
415-969-3700
Contact: Glenn Schiller
■ Products & Services
Cartridges
Cartridge drives
Electronic mailboxes
Floppy disk recorders
Branch Sales Offices:

CA San Francisco
Tri Data
311 California St
415-956-1366

CA Encino
Tri Data
16200 Ventura Blvd
213-995-8988

GA Marietta
Tri Data
1240 Johnsons Ferry Pl
404-971-5242

IL Algonquin
Tri Data
208 Washington St
312-658-3296

NJ Fort Lee
Herb Sprafkin, Reg Mgr
2083 Center
201-947-2093

NJ Hackensack
Tri Data
354 State St
201-487-4911

TX Dallas
Tri Data
5327 N Central Expwy
214-526-0940

TRIFORMATION SYSTEMS INC
3132 SE Jay St
Stuart, FL 33494
305-283-4817
Contact: Guy Carbonneau
■ Products & Services
Microcomputer/ microprocessor systems
Audio response units
Programmable terminals
Terminal interfaces
Code converters
Computer/communications interfaces
Paper for terminals
Lease and resale organizations
Branch Sales Offices:

CA San Rafael
Frank X Shaw & Assoc
1618 Second Ave
415-459-7182

MD Rockville
General Scientific Corp
966 Hungerford Dr
301-340-2773

MA Acton
Duxbury Sys Inc
77 Great Rd
617-263-7761

OH Columbus
Hutchinson & Assoc
2350 N 4th St
614-263-4324

TX Houston
Systems Technology Assoc
Box 90057
713-440-8340

BRITISH COLUMBIA, CANADA
Nanaimo
Learning Sys International Ltd
5271 Laguna Way
604-758-1903

ONTARIO, CANADA
Willowdale
Larco Prods
2372 Bayview Ave
416-445-4433

FRANCE
92350 Le Plessis Robinson
Elinfa S A
53 Rue Colbert
01-632-42-29

TRIMM INDUSTRIES
ENCLOSURE PRODUCTS DIV
3916 State St
Santa Barbara, CA 93105
805-682-4508
Contact: Phil Drachman

TRITON ENGINEERING INC
16879 Oakmont Ave
Gaithersburg, MD 20877
301-948-8116
Contact: Byron B Simms

■ Products & Services
Line drivers
Data content monitors
Code converters
Computer/communications interfaces
Selection & transfer equipment: monitor & test switching equipment
Selection & transfer equipment: patching equipment
Branch Sales Offices:
MD Ashton
Blackwood Assoc
17904 Ednor View Tr
301-924-2858

TRIVEX
(See MDS/Trivex listing)

TROMPETER ELECTRONICS INC
8936 Commanche Ave
Chatsworth, CA 91311
213-882-1020
Contact: P Cox
■ Products & Services
Cables, electrical prefabricated extending
Data jacks and plugs
Selection & transfer equipment: patching equipment
Switches, data communications: manual

TRT TELECOMMUNICATIONS CORP
1747 Pennsylvania Ave NW
Washington, DC 20006
202-862-4500
Contact: Steve Nadler
■ Products & Services
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Message switchers
Branch Sales Offices:
AZ Phoenix
3033 N Central Ave #403
602-892-6227
CA Los Angeles
3407 W 6th St
213-383-3701
CA Mountain View
2483 Old Middlefield Way
415-964-2622
CA San Francisco
141 Battery St
415-433-7452
DC Washington
1747 Pennsylvania Ave NE
202-862-4553
FL Miami
127 SE Second Ave NW
305-358-3308
FL Ft Lauderdale
Box 8876
305-792-5100
GA Atlanta
550 Pharr Rd NE
404-233-5447
IL Chicago
230 N Michigan Ave
312-782-8605
LA New Orleans
419 Decatur St
504-524-1038
LA Pearl River
Drawer E
504-863-5354
ME Manchester
1253 Mautenne Dr
314-227-8313
MA Wellesley Hills
14 Mica Ln
617-237-6057
MI Southfield
21800 W 10 Mile Rd
313-352-0588
MN Minnitonka
13100 Lone Oak Dr
612-935-2471
NJ South River
52-54 Main St
201-257-9020
NY New York
630 Third Ave
212-635-2120
NY New York
26 Broadway
212-635-2680
NY White Plains
305 Central Ave
914-997-9060
NC Charlotte
4935 Central Ave #14
704-393-0620
OH Cleveland
16600 Sprague Rd
216-234-6644
PA Pittsburgh
1301 Clark Bldg
412-355-0605
PA King of Prussia
1150 First Ave #440
215-265-8744
TX Dallas
13773 N Central Expy
214-234-8088
TX Houston
Vieux Carre Building
713-528-2640
WA Seattle
5950 Sixth Ave S #115
206-762-9414
PUERTO RICO
Hato Rey
Box 2133
809-725-8065
ARGENTINA
Buenos Aires
Lacarra 1551
69-4435
BELGIUM
Ninove
13 Langemuntstraat
054-338462
BOLIVIA
La Paz
Edificio Ingavi 50
35-8277
BRAZIL
Rio De Janeiro
Rua Pompeu Loureiro 36
235-3287
CHILE
Santiago
Loreley Lell
274908
COLOMBIA
Bogota
Apartado Aero 15509
257-7819
ECUADOR
Quito
Apartado Postal 1031
218347
ENGLAND
London
15 Stratton St
01-499-2795
GERMANY, WEST
Dusseldorf
Grunstrasse 6
02-11-32 02-55
HONDURAS
Tegucigalpa
Apartado Postal 77-C
22-2223/22-3484
PANAMA
Panama
Calle Samual Lewis
23-9055/23-7055
PERU
Lima
Altos Miraflores
31-9626
VENEZUELA
Caracas 1015-A
Apartado Postal 17566
781-5284

THE TRW-FUJITSU CO
9841 Airport Blvd
Los Angeles, CA 90045
213-535-3821
Contact: Robert Peckham
■ Products & Services
Front-end processors
Message switchers
Remote network processors
DDP systems
Minicomputers
Database processors
Data entry terminals
Programmable terminals
Interactive terminals
Computer/communications interfaces
Paper for terminals
Data communications consultants
Maintenance organizations
Branch Sales Offices:
CA Los Angeles
The TRW-Fujitsu Company
9841 Airport Blvd
213-535-3777
CA San Francisco
The TRW-Fujitsu Company
1750 Montgomery St
415-391-4095
CO Evergreen
The TRW-Fujitsu Company
3560 Hwy 74
303-674-0475
CT Farmington
The TRW-Fujitsu Company
270 Farmington Ave
203-677-2388
FL Orlando
The TRW-Fujitsu Company
3606 Silver Star Rd
800-327-6200
GA Atlanta
The TRW-Fujitsu Company
230 Peachtree St NW
404-688-6832
HI Honolulu
The TRW-Fujitsu Company
900 Fort St Mall #1777
808-531-2103
IL Oak Brook
The TRW-Fujitsu Company
1000 Jorie Blvd
312-986-6400
KY Louisville
The TRW-Fujitsu Company
963 Starks Bldg
502-585-2298
MD Columbia
The TRW-Fujitsu Company
5565 Sterrett Pl
MA Waltham
The TRW-Fujitsu Company
1605 Trapelo Rd
617-890-2424

MA Oak Brook
The TRW-Fujitsu Company
1000 Jorie Blvd #118
312-986-6790

MN Edina
The TRW-Fujitsu Company
5100 Edina Industrial Bldg
612-831-0909

NJ Hasbrouck Hts
The TRW-Fujitsu Company
377 Route 17
201-288-9205

NJ Springfield
The TRW-Fujitsu Company
90 Route 22 at Stern Ave
201-379-1330

NY NYC
The TRW-Fujitsu Company
666 5th Av
212-765-7900

NY Buffalo
The TRW-Fujitsu Company
80 Suggs Rd
716-634-6336

OH North Canton
The TRW-Fujitsu Company
3069 Chaucer NE
216-493-4711

OH Cincinnati
TRW CSD
4511 Reading St
513-242-6720

OR Tigard
The TRW-Fujitsu Company
7100 SW Hampton
503-620-6775

PA Gibsonia
The TRW-Fujitsu Company
5465 Wm Flynn Hwy
412-443-8440

PA Lancaster
The TRW-Fujitsu Company
2840 Southwick Dr
717-569-0873

RI Providence
The TRW-Fujitsu Company
169 Weybosset St
401-274-8902

TX Dallas
The TRW-Fujitsu Company
1770 Viceroy Dr
214-630-2540

TX Austin
The TRW-Fujitsu Company
10600 Morning Dove Dr
512-258-1053

TX Dallas
The TRW-Fujitsu Company
14330 Midway Rd
214-386-0911

TX Dallas
The TRW-Fujitsu Company
14330 Midway Rd #216
214-386-0911

WI Brookfield
The TRW-Fujitsu Company
3490 N 127th St
414-781-1511

WI Green Bay
The TRW-Fujitsu Company
1342 Sky Lark Ln
800-558-8133

TRW CUSTOMER SERVICE DIV
70 Dutch Lane
Fairfield, NJ 07006
201-575-7110
Contact: E Carls
■ Products & Services
Maintenance organizations

Branch Sales Offices:

CA Van Nuys
William Adams
14540 Haynes St;Ferman Bldg
213-781-9900

TRW VIDAR
1344 Crossman Avenue
Sunnyvale, CA 94086
408-745-6360
Contact: Richard Chapple
■ Products & Services
Multiplexers, time division
Digitized-voice processors

Branch Sales Offices:

GA Atlanta
TRW Vidar
4340 Georgetown Sq
404-452-1030

MN Hastings
TRW Vidar
Box 368
612-437-1401

NY Fairport
TRW Vidar
900 Fairport Pk
716-377-2230

TX Hurst
TRW Vidar
1500 Norwood Dr
817-282-0205

WA Kirkland
TRW Vidar
6740 108th Ave NE
206-822-1252

TSI INTERNATIONAL
50 Washington St
Norwalk, CT 06854
203-853-2884
Contact: Raymond D Novak
■ Products & Services
Applications packages
Teleprocessing monitors

Branch Sales Offices:

CA Los Gatos
TSI International
59 North Santa Cruz
408-395-6600

CA Tustin
TSI International
14661 Myford Rd St B
714-730-1737

GA Atlanta
TSI International
2814 New Spring Rd
404-432-2149

IL Lombard
TSI International
2200 S Main St
312-629-6404

MA Woburn
TSI International
200 W Cummings Pk
617-935-5984

MI Southfield
TSI International
21751 W Mile Rd
313-353-7430

NJ Montvale
TSI International
95 Chestnut Ridge Rd
201-391-9800

TX Dallas
TSI International
12606 Greenville Ave
214-644-1467

ONTARIO, CANADA
Markham
TSI International
920 Denison St
416-495-0182

AUSTRALIA
N Sydney
TSI International
121 Walker St
02-922-7870/929-7670

AUSTRALIA
N Sydney
On-Line Systems Group
100 Pacific Hgwy

ENGLAND
Croydon Surrey
TSI Inter Ltd
22 Park St
011-44-1-680-7778

FRANCE
Paris
Turnkey Systems France
3 rue d l'Arrivee
011-33-1-538.99.00

GERMANY, WEST
Muenchen
TSI International GmbH
Hochbruckenstrasse 16
011-49-89-22202/3

ITALY
Milano
Selesta Sistemi SPA
Via Meravigli 16

NEW ZEALAND
Wellington
Commercial Data Processing
71 Boulcott St

SPAIN
Madrid
General de Informatica SA
c/Agustin de Foxa

VENEZUELA
Caracas
Analisis, Programacion y Software
Avenida Principal De Bello Campo Local 42 Mezzania

TYMNET INC
20665 Valley Green Dr
Cupertino, CA 95014
408-446-7000
Contact: Denny White
■ Products & Services
Message (including telegraph) carriers
Packet-switching carriers
Value-added carriers
Message switchers
Remote network processors
Network management centers
Local networks
Message Systems (Video)
Electronic mailboxes
Data entry terminals
Point of sale terminals
Switches, data communications: automatic
Data communications consultants

Branch Sales Offices:

CA El Segundo
Tymnet Inc
2221 El Segundo Blvd
213-640-0278

CA San Francisco
Tymnet Inc
44 Montgomery St #549
415-788-1045

CA Santa Clara
Tymnet Inc
2700 Augustine Dr #165
408-727-0840

CO Englewood
Tymnet Inc
5680 S Syracuse Cir #300
303-741-5080

CT Westport
Tymnet Inc
315 Post Rd West
203-222-1802

GA Roswell
Tymnet Inc
626 Holcomb Bridge Rd #330B
404-998-9153

IL Oak Brook
Tymnet Inc
1211 W 22nd St #704
312-655-2780

MD Vienna
Tymnet Inc
8150 Leesburg Pike #1412
703-827-9110

MA Woburn
Tymnet Inc
304 Cambridge Rd
617-933-7588

MI Howell
Tymnet Inc
611 E Grand River #301
517-546-0302

MN Burnsville
Tymnet Inc
101 W Burnsville Pky #110
612-894-4640

MO Creve Coeur
Tymnet Inc
711 Old Ballas Rd #113
314-569-0028

NJ Lyndhurst
Tymnet Inc
1280 Wall St W
201-460-0450

NY New York
Tymnet Inc
2 Penn Plaza #1950
212-564-9684

NY Pittsford
Tymnet Inc
642 Kreag Rd
716-248-5960

OH Westlake
Tymnet Inc
30400 Detroit Rd #106
216-835-7258

PA King of Prussia
Tymnet Inc
1003 B W 9th Ave
215-265-8170

TX Dallas
Tymnet Inc
6333 Harry Hines Blvd
214-637-7363

TX Houston
Tymnet Inc
11999 Katy Freeway #140
713-870-0913

FRANCE
De St-Cloud
Tymnet Communications
Cegi-Tymshare; 106 Bureaux de la Colline
602-70-12

ULLMAN DEVICES CORP
664 Danbury Rd
Ridgefield, CT 06877
203-438-6577
Contact: Heidi Tydeman

Branch Sales Offices:
ONTARIO, CANADA
Downsview ON
Anro Sales Agencies Ltd
3733 Chesswood Dr
514-332-1252
NETHERLANDS
Alkmaar
Pauwelussen NV
PO Box 174
02260-5345

Get new product information when it breaks?
Turn to **UpDate Service Card, page 201.**

ULTRACHEM
1400 N Walnut St
Wilmington, DE 19899
302-571-8520
Contact: Robert Whiting

ULTRAMATION
202 Twin Oaks Dr
Syracuse, NY 13206
315-437-6470
Contact: George McKee
■ Products & Services
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Add-on auxilliary memory
Tape punch/reader, paper
Teleprinters
Teletypewriters
Word processors, communicating
Personal computer communications software
Computer/communications interfaces
Data communications consultants
Lease and resale organizations

UNGERMANN-BASS INC
2560 Mission College Blvd
Santa Clara, CA 95050
408-496-0111
Contact: James Jordan
■ Products & Services
Local networks
Computer/communications interfaces
Protocol converters
Switches, data communications: automatic
Branch Sales Offices:
MA Burlington
Ungermann-Bass Inc
One Burlington Woods Dr
617-273-5858

MT St Louis
Ungermann-Bass Inc
12300 Olive Blvd
314-434-1024

TX Dallas
Ungermann-Bass Inc
1414 Dallas Pkwy
214-385-5148

UNICOM COMPUTER CORPORATION
2829 Bridgeway Blvd
Sausalito, CA 94965
415-332-2585
Contact: Bambi Holmes
■ Products & Services
Add-on main memory
Disk drives, large
Tape drives, magnetic
Graphic display terminals
Remote job entry terminals
Lease and resale organizations

UNITED DATA SERVICES CO INC
3024 N 33rd Dr
Phoenix, AZ 85017
602-269-2449
Contact: Oliver J Sullivan
■ Products & Services
Line sharing units
Modem sharing units
Port sharing units
Line drivers
Terminal interfaces
Cables, electrical prefabricated extending
Computer/communications interfaces
Pulse and signal regenerators
Branch Sales Offices:
AZ Phoenix
United Data Services Co Inc
3024 N 33 Dr
602-269-2449

UNITED SYSTEMS CORP
918 Woodley Rd
Dayton, OH 45403
513-254-6251
Contact: Bill Schryver
■ Products & Services
Data content monitors
Teleprinters, impact
Teleprinters, non-impact
Branch Sales Offices:
CA Rancho Cordova
Paul Rohrer
11133 Portage River Ct
916-635-0223

UNIVERSAL DATA SYSTEMS INC
5000 Bradford Drive
Huntsville, AL 35805
205-837-8100
Advertising page Cover 4
Contact: Geo R Grumbles
■ Products & Services
Modem sharing units
Modems, multipoint
Modems, multiport
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Modem eliminators
Data content monitors
Protocol analyzers
Response-time monitors
Automatic answering units
Automatic calling units
Data access arrangement devices
Branch Sales Offices:
AL Huntsville
FM Associates Ltd
3322 S Mem Pkwy
205-536-9990

AZ Scottsdale
BFA Corporation
4426 Saddlebag Trl
602-994-5400

AR Anchorage
Drew & Associates
6436 Homer Dr
907-345-1900

CA Redondo Beach
Group Three Elect
2615 Manhattan Beach Blvd
213-973-7844

CA San Diego
Group Three Electronics
7263 Engineer Rd
714-292-0525

CA Sunnyvale
Group Three Electronics
542 Lakeside Dr
408-245-4392

CO Denver
BFA Corporation
1221 S Clarkson St
303-777-8070

DC Washington
Powell-Pendergraph
7979 Old Georgetown Rd
301-656-4535

FL Orlando
FM Associates
5018 Mortier Ave
305-851-5710

FL Jupiter
FM Associates
110 Yacht Club Pl
305-746-2996

HI Honolulu
Gray Assoc
1269 Maleko St
808-261-3751

IA Cedar Rapids
Cahill Assoc
208 Collins Rd NE
319-377-8219

LA Lafayette
Comspec Inc
403 Mecca Dr
318-232-6275

MD Bethesda
Powell-Pendergraph Inc
7979 Old Georgetown Rd
301-656-4535

MA Wakefield
Instrument Dynamics Inc
Lakeside Office Park
617-245-5100

MA Stratford
Instrument Dynamics Inc
Foot of Broad St
203-378-6019

MI Ann Arbor
W C Koepf-Associates Inc
2321 Lancashire
313-459-9150

MI Grosse Pointe
W C Koepf-Associates Inc
764 Washington
313-459-9150

MN St Paul
Cahill Assoc
315 N Pierce St
612-646-7217

MO Grandview
Digital Systems Sales Inc
4006 E 137 Ter
816-765-3337

NJ Englewood
Tecnimat
500 Grand Ave
201-569-4200

NM Las Cruces
BFA Corp
Corner of Hadley & Matel Blvd
505-524-9693

NM Albuquerque
BFA Corporation
1704 Moon NE
505-292-1212

NY DeWitt
DB Assoc
7000 E Genessee St, Bldg D
315-446-0220

NC Ramseur
FM Associates
106 Elam Ave
919-824-8461

NC Atlanta
FM Associates
2060 Peachtree Industrial Ct
404-451-2293

OH Chagrin Falls
W C Koepf-Associates Inc
68 Olive St
216-247-5129

OH Columbus
W C Koepf-Associates Inc
1089 Barberry Ln
614-866-8117

OH Dayton
W C Koepf-Associates Inc
53 Park Ave
513-293-6062

OK Tulsa
Comspec Inc
2547 E 21st St
918-743-6892

OR Beavertown
Thorson Company Northwest
6700 SW 105th St
503-644-5900

PA Ambler
Data Engineering Co
25 Skippack Pike
215-542-9876

PA Pittsburgh
W C Koepf-Associates Inc
919 Tropical Ave
412-344-3653

TX El Paso
BFA Corporation
4120 Rio Bravo
915-542-1762

TX Houston
Comspec Inc
10000 Old Katy Rd
713-461-4487

TX Richardson
Comspec Inc
717 Lingco
214-234-4137

TX San Antonio
Comspec Inc
6326 Sovereign
512-340-6507

TX Odessa
Comspec Inc
1532 East 52nd St
915-563-3620

UT Salt Lake
BFA Corporation
140 W 2100 South
801-466-6522

VA Richmond
Powell-Pendergraph
2727 Enterprise Pkwy
804-270-1400

WA Bellevue
Thorson Company Northwest
1 Lake Bellevue Dr
206-455-9180

ONTARIO, CANADA
Rexdale
ESE Ltd
1780 Albion Rd
416-749-2271

ENGLAND
Croydon
Cole Electronics
105-107 Lansdowne Rd
01-6886822

ISRAEL
Tel-Aviv
Bitcom Agencies
Box 13161
03-481269

SWEDEN
Solna
Svea Data Commun
Box 3004
08-820335

U S INSTRUMENT RENTALS
2988 Campus Dr
San Mateo, CA 94404
415-572-6600
■ Products & Services
Data content monitors
Electrical-parameters test equipment
Protocol analyzers
Response-time monitors
Remote job entry terminals
Lease and resale organizations
Used equipment
Branch Sales Offices:

CA Burbank
US Instrument Rentals
4525 Valerio St
213-849-5861

CA San Mateo
US Instrument Rentals
700 S Claremont
415-579-0911

CO Englewood
US Instrument Rentals
8 Inverness Ct
303-779-0523

IL Arlington Heights
US Instrument Rentals
511 West Golf Rd
312-981-1600

MD Rockville
US Instrument Rentals
1383 Piccard Dr
301-258-9888

NJ Edison
US Instrument Rentals
505 Thornall
201-494-1500

TX Richardson
US Instrument Rentals
1744 No Greenville Ave
214-234-3392

ONTARIO, CANADA
Rexdale
US Instrument Rentals
44 Faskin Dr
416-675-5596

US ROBOTICS INC
203 N Wabash
Chicago, IL 60601
312-346-5650
Contact: Casey Cowell
■ Products & Services
Acoustic couplers
Line drivers
Modems, limited distance
Modems, voice-grade, low-speed (0-1,200 b/s)
Teleprinters, impact
Video data terminals (KSR)

VALTEC CORP
99 Hartwell St
West Boylston, MA 01583
617-835-6082
Contact: Stephen C Lang
■ Products & Services
Multiplexers, time division
Lightwave (fiber optic) systems
Microwave/laser systems
FM systems
Modem eliminators
Cables, lightwave (optical fiber)

Branch Sales Offices:
CA Pasadena
Advanced Techniques
3848 E Colorado Blvd
213-796-6187
MD Silver Springs
Carwithen Assoc Inc
1110 Fidler Ln
301-589-9040
MA Framingham
Sullivan Technical Sales
150 Speen St
617-620-0195
MN Satellite Beach
Reynolds & Assoc
476 North A1A
305-773-4700
NM Albuquerque
Trembly Assoc
119 Quincy NE
505-266-8616
WA Bellevue
Comtec
1715 114 Av SE
206-453-1188
ONTARIO, CANADA
Markham
RF Communications Ltd
120 GIbson Dr
416-495-1030
ENGLAND
London
Walmore Electronics Ltd
11-15 Betteron St
836-1228
GERMANY, WEST
Munchen
TS-Electronic
Widenmayerstr 50
NETHERLANDS
The Hague
Koning En Hartman
PO 8220 20 Koperwerf
SWEDEN
Vaxholm
Saven AB
Strandgatan 3

VAN SAN CORP
16735 E Johnson Dr
City of Industry, CA 91745
213-961-7211
Contact: Steve Holland
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
ENGLAND
London
Power Equipment co
Kingsbury Works; Kingsbury Rd
01-205-0033

VECTOR AUTOMATION
Village of Cross Keys
Baltimore, MD 21210
301-433-4202
Contact: Phillip A Adams
■ Products & Services
Graphic display terminals
Programmable terminals

VECTOR GENERAL INC
21360 Oxnard St
Woodland Hills, CA 91367
Contact: Jim Church

VECTOR GRAPHIC INC
31364 Via Colinas
Westlake Village, CA 91361
213-991-2302
Contact: Jim Alexander
■ Products & Services
DDP systems
Add-on main memory
Disk drives, floppy
Disk drives, large
Teleprinters, impact
Video data terminals (KSR)
Word processors, communicating
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
GA Atlanta
Vector Graphic
6520 Powers Ferry Rd
404-955-6196
MA Waltham
Vector Graphic
303 Wyman St
617-890-0385
NJ Summit
Vector Graphic
34 Maple St
201-522-1782
TX Dallas
Vector Graphic
5501 LBJ Frwy
214-960-1519

If you know the name of the product, you can find out who makes it in the **Products & Services Directory, page 7.**

VEN-TEL INC
2390 Walsh Ave
Santa Clara, CA 95051
408-984-2727
Contact: David O Brallier
■ Products & Services
Acoustic couplers
Line drivers
Modems, limited distance
Modems, multipoint
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modem eliminators

VENTURA COMPUTER SYSTEMS
Box 1385
Ventura, CA 93002
805-643-4313
Contact: Cathy Dillon
■ Products & Services
Custom programs

VERBATIM CORP
323 Soquel Way
Sunnyvale, CA 94086
408-245-4400
Contact: Scott Cochran
■ Products & Services
Cartridges
Cassettes
Disks, floppy
Branch Sales Offices:
CA San Jose
Verbatim Corp
2025 Gateway Place
408-280-1342
CA Los Angeles
Verbatim Corp
1100 Glendon Av
213-824-9702
CA Walnut Creek
Verbatim Corp
1200 Mt Diablo Blvd
415-944-0713
GA Snellville
Verbatim Corp
2250 North Rd
404-979-1212
IL Oak Brook
Verbatim Corp
600 Enterprise Dr
312-654-1990
KS Prairie Village
Verbatim Corp
4200 Somerset
913-642-2185
MA E Longmeadow
Verbatim Corp
15 Benton Dr
413-525-4919
NJ Morganville
Verbatim Corp
50 Hwy 9
201-536-5111
NJ Mahwah
Verbatim Corp
1 Lethbridge Plaza
201-529-1015
PA Upper St Clair
Verbatim Corp
71 McMurray Rd
412-831-2211
TX Kingwood
Verbatim Corp
818B Burning Tree Dr
713-358-3196
TX Dallas
Verbatim Corp
11311 N Central Exprwy
214-696-2636
VA Manassas
Verbatim Corp
7900 Sudly Rd
703-361-1166
JAPAN
Tokyo
Verbatim Far East Ltd
702 Hayama Bldg
03-446-2917
SWITZERLAND
Geneva
Verbatim SA
Case Postale 296
022-349055

VERBEX
Two Oak Park
Bedford, MA 01730
617-275-5160
Contact: L Russell Johnson
■ Products & Services
Digitized-voice processors
Word recognition units
Voice digitizers
Branch Sales Offices:
MA Bedford
Verbex Corp
2 Oak Pk
617-275-5160

VERMONT RESEARCH CORP
Precision Park
North Springfield, VT 05150
802-886-2256
Contact: E Hinkley
■ Products & Services
Add-on main memory
Cartridge drives
Disk drives, large
Branch Sales Offices:
CA Lafayette
Vermont Research Corp
3650 Mt Diablo Blvd
415-283-3294
TX Plano
Vermont Research Corp
651 E 18 St
214-423-8772

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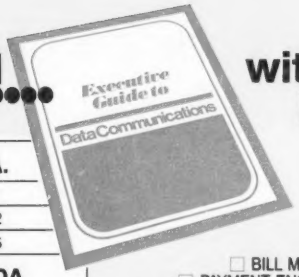

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☐ MASTERCARD ☐ VISA

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Exp. Date _____

SIGNATURE _____

Name _____

Title _____

Company _____

Address _____

City _____ State Province _____

Zip Postal Code _____ Country _____

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Address _____ City _____ State Province _____ Zip Postal Code _____ Country _____

Please complete questions 1 and 2 to qualify for the rates shown. Subscriptions at these rates are limited to persons with active professional, functional and managerial responsibilities in data communications. Other subscriptions: $30 a year in U.S. and Canada; $45 international.

1 ☐ **PRIMARY INDUSTRY CLASSIFICATION (write appropriate letter in box)**

A. **Finance:** such as Banking, Real Estate, Insurance, or Brokerage.
B. **Computers & Peripherals Manufacturing:** (check appropriate box)
☐ Up to $80 million sales
☐ Over $80 million sales
C. **Other Manufacturing & Construction:** (check appropriate box)
☐ Up to $80 million sales
☐ Over $80 million sales
D. **Process Industries:** such as Petroleum, Minerals, Chemicals, Forest Products, Food, or Drugs.
E. **Distribution:** such as Wholesale, Retail Restaurant or Food Chains.
F. **Transportation:** such as Rail, Bus, Marine, Shipping, Auto Rental, Airline, Trucking, or Air Freight.
G. **Utilities:** such as Energy, Communications Common Carriers, Pipelines.
H. **Computer Services:** such as Time Sharing, Data Processing, Software, or Consulting.
I. **Personal & Business Services:** such as Health, Legal, Education, Hotel, Recreation.
J. **Public Administration:** including Federal, State, Municipal or County.
K. **Other** Industries: such as Mining, Agriculture, Forestry or Fishing.
L. **Other,** please specify: _____

2 ☐ **PRINCIPAL JOB FUNCTION (write appropriate number in box)**

1. Corporate Planning & Development
2. Data Communications Planning
3. Data Communications Operations
4. Data Processing Planning
5. Data Processing Operations
6. Network / Systems Implementation

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DataCommunications
P.O. BOX 447
HIGHTSTOWN, N.J. 08520

VERSATEC INC, A XEROX COMPANY
2805 Bowers Ave
Santa Clara, CA 95051
408-988-2800
Contact: Cliff Eppard
■ Products & Services
Digital plotters
Remote line printers
Branch Sales Offices:
AZ Scottsdale
Versatec
6991 E Camelback Rd
602-941-1452
CA Santa Clara
Versatec
1333 Lawrence Expwy
408-985-5810
CA Newport Beach
Versatec
1400 N. Bristol St
714-752-5561
CA Pasadena
Versatec
251 S Lake Ave
213-796-1703
CO Denver
Versatec
4155E Jewel Ave
303-759-1090
CT Hamden
Versatec
105 Sanford St
203-281-7604
FL Altamonte Springs
Versatec
Cranes Roost Office Park
305-830-4450
GA Atlanta
Versatec
5825 Glenridge Dr
404-256-3427
IL Schaumburg
Versatec
650 Woodfield Dr
312-885-9610
KS Overland Park
Versatec
9101 West 110th St
913-341-8003
MD Rockville
Versatec
1600 Research Blvd
301-424-0920
MA Framingham
Versatec
10 Speen St
617-879-8520
MI Southfield
Versatec
340 North Main St
313-453-5800
NJ Union
Versatec
2400 Morris Ave
201-964-7101
NM Las Cruces
BFA Corp of AZ
Corner of Hadley and Motel Blvd
505-524-9693
NM Albuquerque
BFA Corp of AZ
1704 Moon NE
505-292-1212
NY Melville
Versatec
555 Broad Hollow Rd
516-249-4422
NY New Hartford
Versatec
No 1 Nouvelle Park
315-255-1251
OH Miamisburg
Versatec
228 Byers Road
513-859-5021
OH Cleveland
Versatec
20005 Lake Rd
216-331-0975
OK Tulsa
Versatec
3035 East Skelly Dr
918-749-0968
PA McMurray
Versatec
110 Hidden Valley Rd;Peters Township
412-941-2020
PA Wayne
Versatec
999 Old Eagle School Road
215-293-0920
TX Houston
Versatec
9100 Southwest Frwy
713-981-1967
TX Dallas
Versatec
2964 LBJ Frwy
214-620-7620
WA Bellevue
Versatec
1750 112NE
206-453-9368
ONTARIO, CANADA
Rexdale
Aherns & Sopher Ltd
31 Enterprise Rd
416-245-4848
ONTARIO, CANADA
Rexdale
Ahearn & Soper
31 Enterprise Rd
416-245-4848

VERSITRON INC
6310 Chillum Pl NW
Washington, DC 20011
202-882-8464
Contact: Alan R Belli
■ Products & Services
Modem sharing units
Multiplexers, time division
Port sharing units
Lightwave (fiber optic) systems
Modem eliminators
MIL 188C adapters
Local network interfaces
Terminal interfaces
Computer/communications interfaces
Branch Sales Offices:
CA Mountain View
CSS Telecommunications Inc
2680 Bayshore Frontage Rd
415-964-4335
CT Stamford
Ralph Aronson & Associates
Box 3576
203-248-4070
FL Pompano Beach
Saber Assoc
2501 NW 17th Ln
800-327-8998
ONTARIO, CANADA
Nepean
Allcom Data Ltd
5A Caesar Ave
613-226-2340
AUSTRALIA
Canberra
Hawker Pacific Pty Ltd
Industry House, National Circuit
062 73-1325
DENMARK
Naerum
SC Metric A/S
Skodsborgvej 305, DK-2850
02 80 42 00
ENGLAND
Epping, Essex
Tony Chapman Electronics Ltd
80a High St
STD 0378 76138-9
NORWAY
Oslo 11
Metric AS
Ekebergveien 312
02 28 26 24
PORTUGAL
Lisboa 1
Vendor LDA, Rue Sampaio E Pina
50-2 ESQ
66 21 85/6/7
SWITZERLAND
Petit-Lancy 1
Jaquier Electronique,
Grandes-Communes 8
Case postale 111, CH-1213
022 92 76 25

Know the product name? Turn to **Products & Services Directory, page 7** to find out who makes it.

VERTEX ELECTRONICS INC
150 Schmitt Blvd
Farmingdale, NY 11735
516-293-9880
Contact: Gabe Cocombo
■ Products & Services
Modem eliminators
Cables, electrical prefabricated extending
Computer/communications interfaces
Data jacks and plugs
Switches, data communications: manual
Branch Sales Offices:
CA Pasadena
A & F Sales Eng
1000 E Walnut St
213-681-5631
MA Beltsville
Vertex Mid-Atlantic Inc
10774 Tucker St
301-937-0180
NC Charlotte
Ireland Sales
1801 Brookdale Av
704-552-1838
OH Cleveland
Vertex Wire & Cable
26309 Miles Ave
216-831-7140
TX Carrollton
Ralph Matthews & Assoc
27-33 Timberleaf
214-242-8116
WA Kirkland
Cable Marketing Specialists
1201 Market St
206-822-0278

VIA WEST INC
990 Calle Katrina
Rio Rico, AZ 85621
602-281-9646
Contact: Guy Bettenardi

■ Products & Services
Line sharing units
Modem sharing units
Inverse multiplexers
Port selectors
Line drivers
Protocol analyzers
Code converters
Computer/communications interfaces
Protocol converters
Switches, data communications: automatic
Switches, data communications: manual

Branch Sales Offices:
AL Huntsville
Hamilton Avnet
4692 Commercial Dr
205-837-7210
AK Anchorage
Drew & Associates
Box 10-1888
907-349-7800
AK Anchorage
Trans Alaska Data Systems
200 Center Ct
907-276-5616
AZ Tempe
Hamilton Avnet
505 S Madison Dr
602-275-7851
CA Costa Mesa
Avnet Electronics
350 McCormick Ave
714-754-6111
CA Culver City
Hamilton Avnet
10950 Washington Blvd
213-558-2441
CA Los Angeles
David Jamison Carlyle Corp
2049 Century Pk E
213-277-4562
CA Los Angeles
Hamilton Electro Sales
10950 Washington Blvd
213-558-2121
CA Orange County
Hamilton Electro Sales
3170 Pullman St
714-641-1850
CA San Diego
Hamilton Avnet
4545 Viewridge Ave
714-571-7500
CA Sunnyvale
Hamilton Avnet
1175 Bordeaux Dr
408-743-3300
CO Denver
Hamilton Avnet
5921 N Broadway
303-534-1212
CT Georgetown
Hamilton Avnet
643 Danbury Rd
203-762-0361
FL Ft Lauderdale
Hamilton Avnet
6800 NW 20th Ave
305-944-2060
FL St Petersburg
Hamilton Avnet
3197 Tech Dr N
813-567-3930
GA Norcross
Hamilton Avnet
6700 I-85
404-448-0800
IL Schiller Park
Hamilton Avnet
3901 N 25th Ave
312-678-6310
KS Kansas City
Hamilton Avnet
9219 Quiviara Rd
913-888-8900
MD Hanover
Hamilton Avnet
7235 Standard Dr
301-796-5000
MA Newton Highland
Butler Associates
82A Winchester St
617-665-1080
MA Woburn
Hamilton Avnet
50 Tower Office Pk
617-935-9700
MA Wayland
R H Associates Inc
325 Boston Post Rd
617-358-4701
MI Livonia
Hamilton Avnet
32487 Schoolcraft Rd
313-522-4700
MO Hazelwood
Hamilton Avnet
396 Brookes Ln
314-731-1144
MO Earth City
Hamilton Avnet
13734 Shoreline Ct
314-344-1260
NH Nashua
Service Technologies
32 Nightingale Rd
603-883-5369
NJ Cherry Hill
Hamilton Avnet
1 Keystone Ave
609-424-0110
NJ Fairfield
Hamilton Avnet
10 Industrial Rd
201-575-3390
NM Albuquerque
Hamilton Avnet
2524 Baylor SE
505-765-1500
NY Melville
Hamilton Avnet
5 Hub Dr
516-454-6000
NY Rochester
R G Engineering
3100 Monroe Ave
716-385-3021
NY Rochester
Hamilton Avnet
167 Clay Rd
716-457-9130
NY Syracuse
Hamilton Avnet
16 Corporate Cir
315-437-2641
NY Rochester
RG Engineering
3100 Monroe Ave
716-385-3021
OH Cleveland
Hamilton Avnet
4588 Emery Industrial Pkwy
216-831-3500
OH Dayton
Hamilton Avnet
954 Senate Dr
513-433-0610
SC Raleigh
Hamilton Avnet
2830 Industrial Dr
919-829-8030
TX Austin
Hamilton Avnet
10508A Boyer Blvd
512-837-8911
TX Dallas
Hamilton Avnet
4445 Sigma Rd
214-661-8661
TX Houston
Hamilton Avnet
3939 Ann Arbor
713-780-1771
UT Salt Lake City
Hamilton Avnet
1585 West 2100 S
801-927-2800
WA Bellevue
Hamilton Avnet
14214 NE 21st St
206-746-8750
WI Edina
Hamilton Avnet
7449 Cahill Rd
612-941-3801
WI New Berlin
Hamilton Avnet
2975 Morrland Rd
414-784-4510
ONTARIO, CANADA
Etobicoke
Sak Data Products
311 Renforth Dr
416-622-9698
ONTARIO, CANADA
Mississauga
Hamilton Avnet
3688 Nashua Dr
416-677-7432
ONTARIO, CANADA
Mississauga
Data Terminal Mart
2703 Slough St
416-677-0184
ONTARIO, CANADA
Ottawa
Hamilton Avnet
1735 Courtwood Crescent
613-226-1700
QUEBEC, CANADA
St. Lauren
Hamilton Avnet
2670 Sabouin St
514-331-6443

VIRCO MFG CORP
15134 S Vermont Ave
Los Angeles, CA 90044
213-532-3570
Contact: Don Denny
■ Products & Services
Furniture, cabinets, terminal enclosures
Branch Sales Offices:
AR Conway
Virco Mfg Corporation
Hwy 65 South
501-329-2901

VISUAL TECHNOLOGY INC
540 Main St
Tewksbury, MA 01876
617-851-5000
Contact: David Berndtson

■ Products & Services
Data entry terminals
Interactive terminals
Branch Sales Offices:
CA San Diego
Andrew Martonyi
10542 Viacha Dr
714-571-5458
NJ Brielle
Frank R Wesolowski
643 Holly Hill Dr
201-528-8633
OH Centerville
Charles P Delauer
2042 Washington Ck
513-435-7044

VOICE AND DATA SYSTEMS
401 N Michigan
Chicago, IL 60611
312-822-0033
Contact: D Young
■ Products & Services
Message Systems (Voice)
Message Systems (Video)

VOTRAX DIV
FEDERAL SCREW WORKS
500 Stephenson Highway
Troy, MI 48084
313-588-2050
Contact: Robert J Chencinski
■ Products & Services
Audio response units
Branch Sales Offices:
CA Mission Viejo
J H M Marketing Assoc
26572 Matias
714-589-9876
TX Houston
Texas Scientific; A Company of Votrax
6515 Corporate Dr
713-777-7171
ONTARIO, CANADA
Weston
Electronetic Systems Ltd
785 Arrow Rd
416-745-2999
ENGLAND
London
Commercial Invertory Service Co Ltd
26-28 Bedford Row
0734-53031
GERMANY, WEST
Wiesbaden 6200
Votrax Div; Federal Screw Works
Reisstr 16
6121-463822

WANG LABORATORIES INC
One Industrial Ave
Lowell, MA 01851
617-459-5000
Contact: Tom Eifler
■ Products & Services
Branch exchanges—computerized (CBX)
Multiplexers, frequency division
Digitized-voice processors
DDP systems
Minicomputers
Database processors
Message Systems (Voice)
Add-on main memory
Disk drives, floppy
Disks, floppy
Disk drives, large
Disk packs
Electronic mailboxes
Floppy disk recorders
Tape drives, magnetic
Batch terminals
Data entry terminals
Digital plotters
Graphic display terminals
Programmable terminals
Interactive terminals
Portable data entry terminals
Remote line printers
Remote job entry terminals
Video data terminals (KSR)
Video data terminals (RO)
Word recognition units
Word processors, communicating
Word processing packages
Automatic calling units
Computer/communications interfaces
Data security devices: software security modules
Ribbons and supplies for terminals and printers
Educational services
Maintenance organizations
Network simulation services
Timesharing/service bureaus
Branch Sales Offices:
CA Los Angeles
Wang Labs
6151 W Century Blvd
213-645-2872
IL Park Ridge
Wang Labs
1480 Renaissance Dr
312-298-7990
MD Rockville
Wang Labs
One Central Plaza
301-770-1903

WESTERN DIGITAL CORP
2445 McCabe Way
Irvine, CA 92714
714-557-3550
Contact: Jack Ludwig
Branch Sales Offices:
CA Santa Clara
Western Digital Corp
3333 Bowers Ave
CA Newport Beach
Western Digital Corp
1151 Dove St
FL Casselbury
Western Digital Corp
Box 1514
IL Des Plaines
Western Digital Corp
3158 Des Plaines Ave
MA Marblehead
Western Digital Corp
70 Atlantic Ave
ENGLAND
Morden Surrey SM4 5EU
Western Digital Corp
Crown House

WESTERN MULTIPLEX CORP
1045 Howard Ave
San Carlos, CA 94070
415-592-8832
Contact: John P Bartelme
■ Products & Services
Multiplexers, frequency division
Multiplexers, group band
Microwave/laser systems
Modems, broadband group (to 50 kb/s)

Want to receive announcements of new products?
Turn to **UpDate Service Card, page 201.**

WESTERN PERIPHERALS INC
14321 Myford Rd
Tustin, CA 92680
714-730-6250
Contact: Richard Sholly
■ Products & Services
Cartridge drives
Cassette drives
Disk drives, large
Tape drives, magnetic
Branch Sales Offices:
CA Orange
Gemini Assoc
461 S Glassell
714-997-7745
CA San Diego
Gemini Assoc
4236 Balboa Ave
714-270-0088
CA Los Alamitos
Gemini Assoc
3532 Katella
213-594-9618
CA San Jose
PBC Assoc
1926 Quebec Way
408-377-7001
CA North Hollywood
Gemini Associates
12111 Strathern St
213-846-2633
CA Irvine
Gemini Associates
4181 Belvedere
714-551-0110
CT Danbury
R D Stout Associates
Four Franklin St
203-794-1884
FL Orlando
Col-Ins-Co
1313 44 St
305-423-7615
IL Northbrook
Resource Data Systems
801 Skokie Blvd
312-564-5440
KS Overland Park
Ramsey Associates
6900 W 80th St
913-649-6996
MD Landover
Data Systems Marketing
8401 Corporate Dr
301-577-3700
MA Acton
R D Stout Assoc
75 Great Rd
617-263-1128
MN Elk River
Prairie Associates
661 Main St
612-441-6190
MO Maryland Heights
Ramsey Associates
75 Worthington Dr
314-878-5042
NY Latham
J Cameron Associates
Box 239
518-371-5947
NY Great Neck
Harvey J Krasner Associates
87 Water Mill Ln
516-487-0690
NC Rochester
J Cameron Associates
29 Goodway Dr
716-473-4590

OH Dayton
E V Swenson
5250 Far Hills Av
513-435-2772

OR Portland
Pacific Northwest Electr
2035 SW 58th St
503-292-3505

PA Hatboro
QED Electronics
300 North York Rd
215-674-9600

TX Dallas
SCI Sales Inc
16990 Dallas Pkwy
214-931-1487

TX Houston
SCI Sales
1199 Nasa Road 1
713-488-3728

WA Bellevue
Pacific Northwest Electr
2020 116th Ave NE
206-454-0150

WI Waukesha
Prairie Associates
2913 Devonshire
414-544-1141

BRITISH COLUMBIA, CANADA
N Vancouver
Tracan Electronics Western
1859 Welch St
604-984-4141

WESTERN TELE-COMMUNICATIONS INC
PO Box 22595; Wellshire Station
Denver, CO 80222
303-366-6400
Contact: Robert L Ottmann-Commercial
■ Products & Services
Specialized carriers
Earth stations
Lightwave (fiber optic) systems

WESTERN TELEMATIC INC
2435 S Anne St
Santa Ana, CA 92704
714-979-0363
Contact: David L Shumway
■ Products & Services
Line sharing units
Modem sharing units
Port selectors
Port sharing units
Floppy disk recorders

Branch Sales Offices:

CA Los Angeles
David Jamison Carlyle Corp
2049 Century Park East
213-277-4562

CO Denver
American Teledata
7290 Samuel Dr
303-427-2121

MA Bedford
Continental Resources
175 Middlesex Tnpk
617-275-0850

ENGLAND
Chesham Bucks
Zygal Dynamics Ltd
13 High St

SWITZERLAND
Zurich
Erni & Co
CH-8306 Bruttisellen

WESTERN UNION INTERNATIONAL, INC
One WUI Plaza
New York, NY 10004
212-363-6400
Contact: E C Clark
■ Products & Services
Facsimile-service carriers
International record carriers
Message (including telegraph) carriers
Packet-switching carriers
Specialized carriers

Branch Sales Offices:

CA San Francisco
Western Union Int'l
111 Pine St
415-986-3971

CA Los Angeles
Western Union Int'l
1730 West Olympic Blvd
213-380-4280

CT Georgetown
Western Union Int'l
941 Danbury Rd
203-544-8387

DC Washington, D C
Western Union Int'l
2100 M St NW
202-293-7810

FL Miami
Western Union Int'l
25 Southeast Second Ave
305-373-3106

GA Atlanta
Western Union Int'l
2814 New Spring Rd
404-433-0101

HI Honolulu
Western Union Int'l
333 Queen St
808-531-2781

IL Chicago
Western Union Int'l
165 North Canal St
312-648-0734

LA New Orleans
Western Union Int'l
2 Canal St
301-685-6003

MD Baltimore
Western Union Int'l
Chamber of Commerce Bldg
301-539-5750

MA Boston
Western Union Int'l
50 Staniford St
617-482-5101

MI Detroit
Western Union Int'l
2990 West Grand Blvd
313-875-1121

NJ Middlesex
Western Union Int'l
480 Lincoln Blvd
201-560-0707

NY New York
Western Union Int'l
26 Broadway
212-363-6432

NY Jericho
Western Union Int'l
366 North Broadway
516-822-1050

OH Westlake
Western Union Int'l
26915 Westwood Rd
216-871-0800

PA Philadelphia
Western Union Int'l
2400 Chestnut St
215-563-7960

TX Houston
Western Union Int'l
16630 Imperial Valley D
713-445-7750

TX Dallas
Western Union Int'l
4255 LBJ Freeway
214-233-2381

WI Milwaukee
Western Union Int'l
250 East Wisconsin Ave
414-276-3900

PUERTO RICO
San Juan
Western Union Int'l
Box 1232
809-725-2121

ARGENTINA
Buenos Aires
Western Union Int'l S A E F
Belgrano 748-5th Floor
30-6464

BELGIUM
Brussels
Western Union Int'l
391 Ave Louise Box 14
649-52-66

BRAZIL
Rio DeJaniero
Importacao e Exportacao LTDA
Rua Miquel Cuoto 105 Sala
263-3235

BRAZIL
Sao Paulo
Weisstel Importacao e Exportacao
Rua Augusta 1371-CEP 01305
284-2355

CHILE
Santiago
Western Union Int'l
Box 13396
391174

COLOMBIA
Bogota
Western Union Int'l
Apartado Aereo No 28919
282-7343

ECUADOR
Quito
Western Union Int'l
Apartado Postal 2100
530-168

ECUADOR
Quito
Western Union Int'l
Apartado Postal 3797
247-005

EGYPT (UAR)
Cairo
Western Union Int'l
168 Tahrir St Bab Elouk
742-668

EL SALVADOR
San Salvador
Western Union Int'l
Box 1008
216-994

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ENGLAND
London
Western Union Int'l
1-3 Smithfield St
01-588-1914

FRANCE
Paris
Western Union Int'l
34 Rue Boissiere
505-6680

GERMANY, WEST
Frankfurt
Western Union Int'l
Grosse Bockenheimer
28-42-19

GREECE
Athens
C G Lazarakis SA
17 Valaoritou St
361-8411

GUAM
Tamuning
Western Union Int'l
Box 7545
646-8110

ITALY
00198, Rome
Western Union Int'l
Via PO 2 Apt 110
863-368

JAPAN
Amman
Western Union Int'l
Box 3089
42-4-34

JORDAN
Jabal
Western Union Int'l
Box 3089
42-4-34

KOREA REP (REP)
Seoul
Western Union Int'l
Kwang Hak Bldg 360-1 2 KA
285-771

LEBANON
Beirut
Western Union Int'l
Box 135418
35-3-357

LEBANON
Beirut
Western Union Int'l
Verdun St
344-995

MALAYSIA FED OF
Kuala Lumpar
Western Union Int'l
120 Jalan Pudu
429-137

NETHERLANDS ANTILLES
Curacao
Western Union Int'l
Gouverneur Van Lansbergeweg 23
2-35-69

NIGERIA
Ikeja, Lagos-State Cable:
Wuiniger Lagos
Western Union Int'l
Box 1631

PANAMA
Panama
Electrodinamica SA
Apdo 6-2526
60-8595

PERU
Lima 100
Western Union Int'l
Apartado Postal 4821
41-3821

PHILIPPINES
Makati Metro Manila
Western Union Int'l
115-117 Esteban St
856-011

SAUDI ARABIA
Riyadh
Western Union Int'l
Box 41934
966-1-4760006

SINGAPORE
Singapore
Western Union Int'l
Parklane Shopping Mall
338-6915

SPAIN
Madrid 16
J H Roerden y CIA SA
Alberto Alcocer 38-7A
250-4869

SWITZERLAND
1207 Geneva
Western Union Int'l
52 Rue Ernest Bloch
351-121

TAIWAN
Taipei
Eastwall Alliance China Ltd
Box 36-158
751-0213

TUNISIA
Tunis
Western Union Int'l
1 Rue Octave Auguste, Notre Dame
283-250

URUGUAY
Montevideo
Western Union Int'l
Senvicio Teletipos Bacacay
1325-1° Piso
91-1025

VENEZUELA
Caracas
Western Union Int'l
Box 51844
623285

Products are listed alphabetically in the **Products & Services Directory, page 7.**

THE WESTERN UNION TELEGRAPH CO
1 Lake St
Upper Saddle River, NJ 07458
201-825-5000
Contact: A B Purviance
■ Products & Services
Message (including telegraph) carriers
Satellite carriers
Specialized carriers
Telephone companies
Modems, voice-grade, low-speed (0-1,200 b/s)
Modems, voice-grade, medium speed (1,800-3,600 b/s)
Modems, voice-grade, high-speed (4,800-9,600 b/s)
Cassettes
Cassette drives
Tape, paper
Data entry terminals
Interactive terminals
Teleprinters
Teleprinters, impact
Teletypewriters
Video data terminals (KSR)
Automatic answering units
Automatic calling units
Computer/communications interfaces
Data access arrangement devices
Furniture, cabinets, terminal enclosures
Paper for terminals
Ribbons and supplies for terminals and printers
Maintenance organizations
Used equipment
Branch Sales Offices:
CA Oakland
Western Union Tel Co
303 Hegenberger Rd
415-568-6126
CA Los Angeles
Western Union Tel Co
745 S Flower St
213-627-4321
GA Atlanta
Western Union Tel Co
56 Marietta St NW
404-688-9820
IL Chicago
Western Union Tel Co
427 S LaSalle St
312-435-1500
MA Wellesley
Western Union Tel Co
20 William St
617-237-2580
MI Southfield
Western Union Tel Co
23100 Providence Dr
313-559-7850
MN Minneapolis
Western Union Tel Co
317 Second Av S
612-332-4242
MO Kansas City
Western Union Tel Co
801 Charlotte St
816-474-4622
NJ Cherry Hill
Western Union Tel Co
950 Kings Hwy N
609-667-6294
NY New York
Western Union Tel Co
60 Hudson St
212-577-4321
TX Dallas
Western Union Tel Co
9229 LBJ Frwy
214-690-0071
VA McLean
Western Union Tel Co
7916 Westpark Dr
703-790-2274
WA Seattle
Western Union Tel Co
655 S Orcas St
206-764-4512

WESTINGHOUSE OPERATING SOFTWARE PRODUCTS
2040 Ardmore Blvd
Pittsburgh, PA 15221
412-636-3100
Contact: W J Bates
■ Products & Services
Teleprocessing monitors
Data communications consultants
Branch Sales Offices:
CA Tarzana
Westinghouse Operating Software Products
18321 Ventura Blvd
213-344-9881
NJ Westmont
Westinghouse Operating Software Products
210 Haddon Ave
609-858-1933

WESTREX OEM PRODUCTS
1140 Bloomfield Avenue
West Caldwell, NJ 07066
201-227-7290
Contact: James C Murray
■ Products & Services
Tape, paper
Tape punch/reader, paper
Teleprinters, impact
Branch Sales Offices:
CA Granada Hills
Westrex Oem Prods
16800 Devonshire St
213-363-7419
NJ W Caldwell
Westrex Oem Prods
1140 Bloomfield Ave
201-227-7290
ENGLAND
London
Westrex UK
152 Coles Green Rd
452-5401
FRANCE
Paris
Westrex Oem Prods
103-105 Rue de Tocqueville
766 32 70
SWEDEN
Stockholm
Westrex Oem Prods
Centralvagen S-18351-Taby
756-28-05

THE WIDGET WORKS
21 King St
St Augustine, FL 32084
904-471-1109
Contact: E J Patton
■ Products & Services
Line drivers
Modem eliminators
MIL 188C adapters
Electrical-parameters test equipment
Code/protocol conversion programs
Cables, electrical prefabricated extending
Code converters
Furniture, cabinets, terminal enclosures
Protocol converters
Switches, data communications: manual

WINTERHALTER & ASSOCIATES, INC
3825 North Zeeb Rd
Dexter, MI 48130
313-426-3029
Contact: Greogry J Winterhalter
■ Products & Services
Concentrators
Front-end processors
Message switchers
Multiplexers, statistical (intelligent)
Remote job entry terminals
Terminal controllers
Code/protocol conversion programs
Custom programs
Emulation packages
Transport software
Access program
Personal computer communications software
Teleprocessing monitors
Code converters
Protocol converters
Data communications consultants
Branch Sales Offices:
NY New York
Lifeboat Associates
1651 Third Ave
212-860-0300
PA Langhorne
Standard Micro Systems
136 Granet Hill Ct
215-968-5966

WRIGHT LINE INC
160 Gold Star Blvd
Worcester, MA 01606
617-852-4300
Contact: Joe Nedder
■ Products & Services
Disks, floppy
Tape, magnetic
Fire detection/protection equipment
Furniture, cabinets, terminal enclosures

XEROX CORP
880 Apollo St
El Segundo, CA 90245
213-679-4511
■ Products & Services
Remote job entry terminals
Teleprinters, impact
Teletypewriters
Branch Sales Offices:
CA San Francisco
Xerox Corp
One California St
415-393-1800
CA Santa Clara
Xerox Corp
5000 Old Ironsides Dr
408-988-8800
CA Los Angeles
Xerox Corp
10100 Santa Monica Blvd
213-450-9126
CO Denver
Xerox Corp
3333 Quebec St; Bldg B
303-320-6700
CT Hartford
Xerox Corp
One Financial Plaza
203-278-9810
GA Atlanta
Xerox Corp
10 Perimeter Park
404-953-7000
IL Chicago
Xerox Corp
8550 W Bryn Mawr Ave
312-981-7400
IN Indianapolis
Xerox Corp
4740 Kingsway Dr
317-257-5232
KS Overland Park
Xerox Corp
6400 Glenwood
913-677-3434
LA Metairie
Xerox Corp
3501 North Causeway Blvd
504-834-2710
MA Lexington
Xerox Corp
191 Spring St
617-861-1670
MI Southfield
Xerox Corp
26555 Evergreen
313-355-9400
MN Bloomington
Xerox Corp
2850 Metro Dr
612-854-5052
MO St Louis
Xerox Corp
1 Mercantile Center
314-342-1190
NJ Parsippany
Xerox Corp
1719 Rt 10
201-455-1200
NY New York
Xerox Corp
40 West 57 St
212-486-0370
NY Rochester
Xerox Corp
132 Allens Creek Rd
716-271-7710
OH Valley View
Xerox Corp
5811 Canal Rd
216-831-6300
OH Columbus
Xerox Corp
6600 Busch Blvd
614-436-3068
OH Cincinnati
Xerox Corp
11499 Chester Rd
513-671-6220
OK Oklahoma City
Xerox Corp
4334 NW Expwy
405-840-3848
PA Pittsburgh
Xerox Corp
875 Greentree Rd
412-922-7010
PA Ft Washington
Xerox Corp
1075 Virginia Dr
215-628-8484
TX Dallas
Xerox Corp
8585 Stemmons Frwy
214-385-9475
TX Houston
Xerox Corp
1717 St James Pl
713-622-0540
VA Arlington
Xerox Corp
1616 North Ft Myer Dr
703-841-5250
WA Seattle
Xerox Corp
1400 112 NE
206-453-2222
WI Milwaukee
Xerox Corp
2200 N Mayfair Ave
414-258-4000

XEROX CORP
OFFICE PRODUCTS DIV
1341 W Mockingbird Lane
Dallas, TX 75247
214-689-6000
Contact: Jack White
■ Products & Services
Local networks
Microcomputer/ microprocessor systems
Electronic mailboxes
Facsimile terminals
Branch Sales Offices:
AL Birmingham
Xerox Corp
813 Shade Creek Pkwy
AZ Phoenix
Xerox Corp
3030 N Central Ave
CA San Francisco
Xerox Corp
350 California St
CA Carson
Xerox Corp
500 Carson Plaza Dr

CA San Diego
Xerox Corp
404 Camino Del Rio S

CA Orange
Xerox Corp
One City Blvd

CA Los Angeles
Xerox Corp
2029 Century Pk E

CA Santa Clara
Xerox Corp
5000 Old Ironsides

CA Oakland
Xerox Corp
7751 Edgewater Dr

CO Englewood
Xerox Corp
5700 S Quebec

CT Greenwich
Xerox Corp
Two Pickwick Plaza

CT Hartford
Xerox Corp
One Financial Plaza

FL Tampa
Xerox Corp
Tampa Int'l Airport Hotel

FL Coral Gables
Xerox Corp
201 Alhambra Cir

GA Atlanta
Xerox Corp
1801 Peachtree NE

HI Honolulu
Xerox Corp
Davies Pacific Ctr;841 Bishop St

IL Schaumburg
Xerox Corp
One Woodfield Lake

IL Chicago
Xerox Corp
55 W Monroe

IL Oakbrook
Xerox Corp
3201 W 22nd St

KS Shawnee
Xerox Corp
6405 Metcalf

KY Louisville
Xerox Corp
10001 Linn Station Rd

LA Metairie
Xerox Corp
3501 N Causeway Blvd

MD Towson
Xerox Corp
409 Washington Ave

MA Lexington
Xerox Corp
191 Spring St

MI Detroit
Xerox Corp
26555 Evergreen Rd

MI Lansing
Xerox Corp
6546 Mercantile Way

MN Minneapolis
Xerox Corp
2850 Metro Dr

MO St Louis
Xerox Corp
12115 Lackland

NJ Oradell
Xerox Corp
690 Kinderkamack

NJ Morris Plains
Xerox Corp
201 Littleton Rd

NY New York
Xerox Corp
40 W 57 St

NY Albany
Xerox Corp
24 Aviation Rd

NY Woodbury
Xerox Corp
105 Froelich Farm Blvd

NY Tarrytown
Xerox Corp
555 White Plains Rd

NC Charlotte
Xerox Corp
6060 St Albans

OH Columbus
Xerox Corp
471 E Broad St

OH Beachwood
Xerox Corp
23175 Commerce Park Rd

OH Cincinnati
Xerox Corp
644 Linn St

OK Oklahoma City
Xerox Corp
50 Penn Pl

OR Portland
Xerox Corp
1800 Southwest First

PA Ft Washington
Xerox Corp
1075 Virginia Dr

PA Pittsburgh
Xerox Corp
601 Holiday Dr

PA Philadelphia
Xerox Corp
1700 Market St

PA Camp Hill
Xerox Corp
207 House Ave;Capitol City Ctr

RI Providence
Xerox Corp
One Weybossep Hill

TN Nashville
Xerox Corp
50 Vantage Way

TX Dallas
Xerox Corp
8585 N Stemmons Frwy

TX Houston
Xerox Corp
220 One Allen Ctr

TX Dallas
Xerox Corp
1341 W Mockingbird Ln

TX Austin
Xerox Corp
7718 Wood Hollow Rd

TX Dallas
Xerox Corp
1341 W Mockingbird Ln

UT Salt Lake City
Xerox Corp
757 E South Temple

VA Richmond
Xerox Corp
6620 W Broad St

VA Arlington
Xerox Corp
1616 Ft Myer Dr

VA Norfolk
Xerox Corp
#8 Koger Exec Ctr

VA Leesburg
Xerox Corp
Box 2000

WA Tukwila
Xerox Corp
6400 Southcenter Blvd

WI Brookfield
Xerox Corp
440 Exec Dr

XEROX CORPORATION

800 Long Ridge Rd
Stamford, CT 06904
203-329-8700
Contact: Michael E G Kirby
■ Products & Services
International record carriers
Local networks
Microcomputer/ microprocessor systems
Disk drives, floppy
Data entry terminals
Digital plotters
Facsimile terminals
Programmable terminals
Interactive terminals
Teleprinters
Teleprinters, impact
Word processors, communicating
Microfilm equipment, systems and services
Ribbons and supplies for terminals and printers
Educational services
Timesharing/service bureaus

XYCOM CORP

750 N Maple Rd
Saline, MI 48176
313-429-4971
Contact: Dan Lewis
■ Products & Services
Batch terminals
Programmable terminals
Remote job entry terminals
Video data terminals (KSR)
Computer/communications interfaces

Branch Sales Offices:

CA San Mateo
XYCOM Inc
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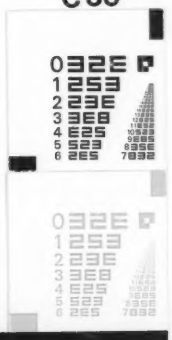
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